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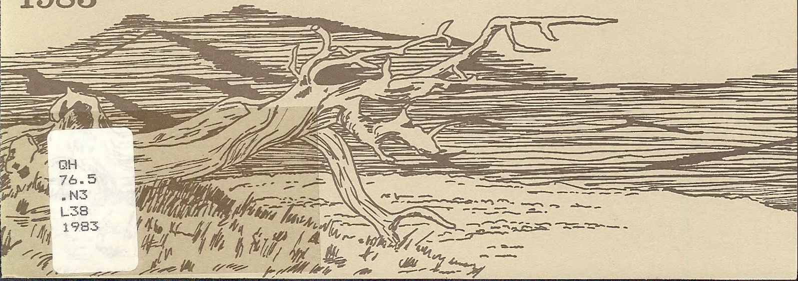
Lahontan Wilderness Technical Report

Bureau of Land Management
Carson City District
Lahontan Resource Area
Nevada

September
1983



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LAHONTAN RESOURCE AREA
WILDERNESS
TECHNICAL REPORT

Bureau of Land Management
Carson City District
Carson City, Nevada

September, 1983

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I. INTRODUCTION

The Lahontan Resource Area Wilderness Technical Report is a supplement to the Lahontan Resource Management Plan (RMP) and provides a more detailed evaluation of the criteria and quality standards of the Wilderness Study Policy (February 3, 1982) summarized in the RMP. These criteria and quality standards are listed below.

Criteria and Quality Standards

Criterion 1 - Evaluation of Wilderness Values
a) Mandatory Wilderness Characteristics
b) Special Features
c) Multiple Resource Benefits
d) Diversity in the National Wilderness Preservation System

Criterion 2 - Manageability

Quality Standards
1) Energy and Mineral Resource Values
2) Impact on Other Resources
3) Impact of Nondesignation on Wilderness Values
4) Public Comment
5) Local and Social Economic Effects
6) Consistency with Other Plans

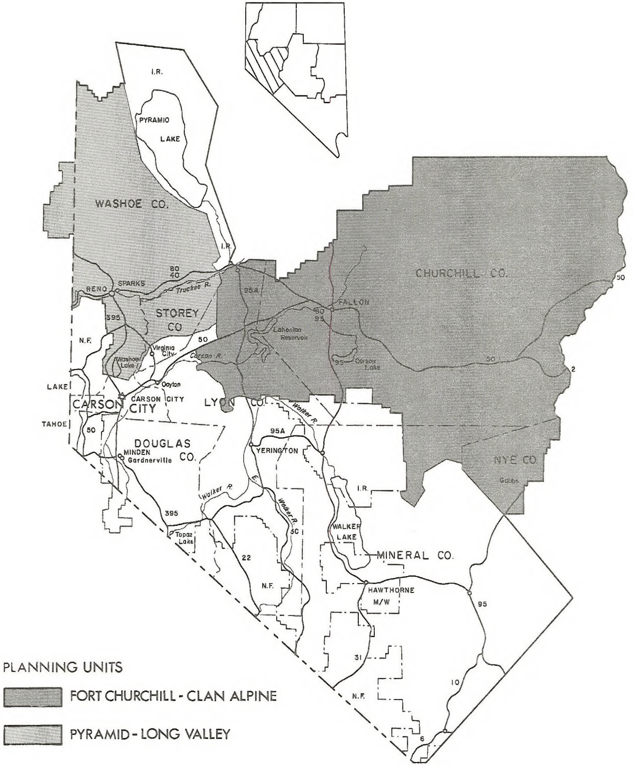
There are five WSAs located in the Lahontan Resource Area (Maps 1 and 2) although only four are addressed in this report and in the RMP since the Winnemucca District has taken the lead on the Augusta Mountains WSA (NV-030-108). The acreages of these WSAs were more carefully calculated for this report and resulted in a slight overall difference (+1.9%) from those figures published in November, 1980. The four WSAs and their acreages are shown on Table 1.

TABLE 1
WILDERNESS STUDY AREA ACREAGES

		Published Acreage	Recalculated Acreage
NV-030-102	Clan Alpine Mountains	193,120 acres	196,128 acres
NV-030-104	Stillwater Range	92,053 acres	94,607 acres
NV-030-110	Desatoya Mountains	48,150 acres*	51,262 acres**
NV-030-127	Job Peak	91,022 acres	90,209 acres
TOTAL		424,345 acres*	432,206 acres**

* 9,000 acres are located in the Battle Mountain District
** 8,990 acres are located in the Battle Mountain District

This recalculated acreage represents approximately 17.6% of the total public land acreage within the Fort Churchill-Clan Alpine Planning Units and roughly 15.3% of the total public land acreage in the Resource Area. These new acreage figures will be used throughout the remainder of this report.

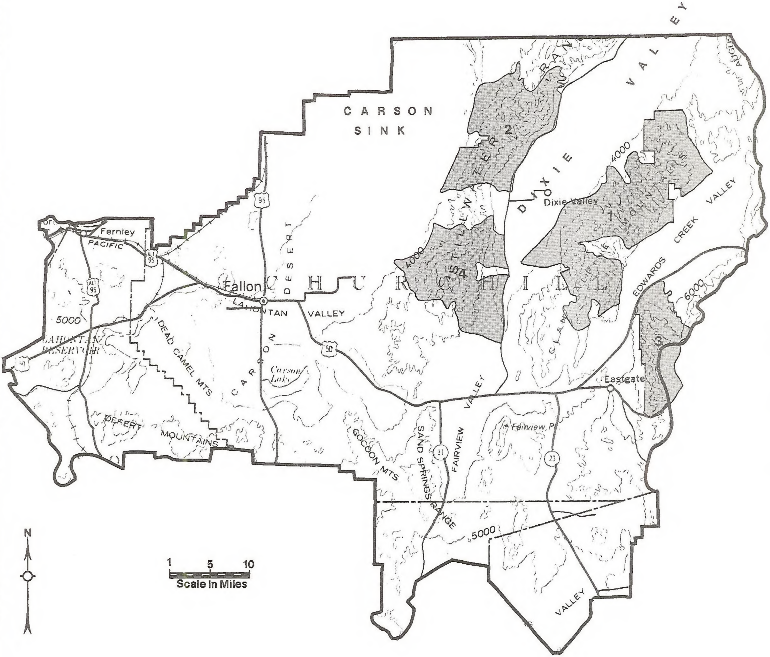


CARSON CITY DISTRICT

Lahontan Resource Management Planning Area

MAP-1

1. CLAN ALPINE RANGE NV-030-102
2. STILL WATER RANGE NV-030-104
3. DESATOYA MOUNTAINS NV-030-110
4. JOB PEAK NV-030-127



UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CARSON CITY DISTRICT
LAHONTAN RESOURCE MANAGEMENT PLAN AREA

WILDERNESS STUDY AREAS

MAP-2

II. INFORMATION APPLICABLE TO ALL FOUR STUDY AREAS

In considering the criteria and quality standards listed in the Introduction, several points are applicable to all four WSAs. To avoid repetition these are discussed in the following section. Table 2, Suitability Criteria Matrix, summarizes the wilderness values and manageability of each of the four WSAs as discussed in the body of this report.

Criterion No. 1: Evaluation of Wilderness Values

Component No. 1: Quality of the Area's Mandatory Wilderness Characteristics

A. Naturalness

There are no generally applicable points under this component. This item is addressed separately in each WSA analysis.

B. Outstanding Opportunities for Solitude and Primitive and Unconfined Recreation

1. Solitude

Since 1968, the Fallon Naval Air Station (NAS) has conducted air warfare training in the airspace over the four WSAs. Restricted airspace blankets much of the Job Peak, Stillwater and Clan Alpines WSAs and a small portion of the Desatoyas WSA. Airspace over all of the WSAs is within the Gabbs Military Operating Area (MOA).

At the present time, overflights of the areas are conducted by tactical aircraft involved in instrumental air warfare training. These overflights are frequently low-level and always at high speeds. Flight levels generally range from 200' Above Ground Level (AGL) to approximately 13,000' AGL. Operations are conducted up to six days a week from 7:00 a.m. to midnight, although the vast majority of these operations occur during daylight hours. Figures provided by the Navy indicate that air operations tend to decrease on weekends and during the winter months. The total number of runs down Dixie and Edwards Creek Valleys (primarily Dixie) by NAS aircraft in 1981 was 4811, or an average of roughly 15 per day for a six day week.

The Navy proposes to increase air operations over the four WSAs. An application for withdrawal of 181,323 acres of public lands in the vicinity of the WSAs (including approximately 23,320 acres inside the Job Peak WSA) has been filed. The NAS wishes to greatly expand the present electronic warfare range and to begin conducting supersonic operations in the existing airspace. A draft environmental statement dealing with the proposed Supersonic Operating Area (SOA), originally expected in February, 1983, has not yet been released.

SUITABILITY CRITERIA MATRIX

TABLE 2

			102 CLAN ALPINES	104 STILLWATER RANGE	110 DESATOYAS	127 JOB PEAK
WILDERNESS VALUES	WILDERNESS CHARACTERISTICS	Size	196,128 acres	94,607 acres	51,262 acres	90,209 acres
		Naturalness	Most of unit pristine. Few range improvements are widely spaced. Mining areas adjacent to boundary. Several cherrystem roads.	Several roads and ways & former mining activity in northern quarter. Mining areas adjacent to boundary. Mountainous portion essentially natural.	Vast majority of unit pristine. Few range improvements; widely spaced. No mining in WSA or along boundary. Most cherrystem roads are short.	Several roads, ways & range improvements in NW corner. Remainder of area is essentially natural.
		Solitude/ Primitive Recreation	Excellent opportunities. Large size, good natural screening. Diverse, high quality recreation opportunities. Configuration limiting.	Fair opportunities. Best in central portion. Recreation not especially diverse or of superior quality.	Excellent opportunities. Rugged topography, often dense vegetation. Diverse, high quality recreation opportunities.	Fair to good opportunities. Best in central mountainous portion. Recreation opportunities fairly diverse & of good quality.
	SPECIAL FEATURES		Interesting geologic features in north. Area highly scenic. Approx. 800-900 wild horses in the area.	Fault scarp of 1954. ROS "primitive" designation on 7000 acres.	Unique ecologic relationships. Extremely scenic. Interesting geologic features. Significant archaeologic site. Historic sites near boundary.	Fault scarp of 1954. Recently reintroduced herd of desert bighorn sheep.
	MULTIPLE RESOURCE BENEFITS		Designation would protect significant cultural, scenic, & ecological values.	Would aid in protecting ROS "primitive" designation.	Designation would protect significant cultural, scenic & ecologic values.	Designation would aid in protecting desert bighorn sheep herd.
	DIVERSITY	Natural Systems	Topography, vegetation, visual resources diverse. Mountain mahogany-oak scrub ecosystem representation; not currently found in NWPS.	No ecosystem/landform types which are not represented in greater quantity & quality elsewhere in the region.	Topography, vegetation, visual resources diverse. Major riparian areas. Mountain mahogany-oak scrub ecosystem representation; not now found in NWPS.	No ecosystem/landform types which are not represented in greater quantity & quality elsewhere in the region.
		Opportunities Near Pop. Centers	Within one day's drive of two SMSAs. Moderate to high demand for both solitude & recreation due to large size and natural values.	Within one day's drive of two SMSAs. Low demand due to lack of destination points & major points of interest; better quality areas nearby.	Within one day's drive of two SMSAs. Relatively high demand for both solitude & recreation due to scenic and natural values.	Within one day's drive of two SMSAs. Moderate demand due to large size, bighorn sheep herd & natural values in central portion.
		Geographic Distribution	Four administratively endorsed areas (190,410 acres) in west/west-central Nevada. Nearest wilderness areas in Sierra Nevada. Geographic region under-represented in NWPS.			
MANAGE-ABILITY			Hard to control ORVs on flats. Numerous cherrystem roads and "peninsula-like" non-WSA intrusions. Several mining areas along cherrystem roads. Potential visitor use problems. Boundaries may be hard to identify.	Hard to control ORVs on flats. Two areas of private inholdings w/o access. Several mining areas along cherrystem roads. Good mineral & geothermal potential.	West side protected by natural barriers. ORVs may be hard to control on east side. Some concentration of use along west side. Some cherrystem roads (Topia-Cedar Creek) may pose problems.	Several roads & ways in NW portion. Hard to control ORVs on flats. Good geothermal & mineral potential.

Should this SOA be instituted, the Navy estimates that 25-100 sonic booms would occur daily. Most of these would originate at or above 6000' AGL. The Navy also states that these booms would be of short duration due to the altitude involved and the relative silence of the F/A-18, the aircraft to be used. Low-level "accidental" booms may also occur though.

Disruption by existing air operations of the otherwise pervasive silence, which contributes to the feeling of solitude in these four WSAs, is relatively infrequent. These disruptions are most noticeable along the east side of the Stillwater Range and Job Peak WSAs and the west side of the Clan Alpine Range, since Dixie Valley is the main corridor for aircraft working the B-19 target area south of U.S. 50. Use of the B-20 range in Carson Sink also affects solitude on the west side of the Stillwater Range. A visitor to these WSAs may never experience such a disruption, although anyone spending more than two or three days in one of these units will likely encounter noise associated with low-level, high speed flights sometime during his stay. Personal experiences of Resource Area staff working in the area indicate that disruptions average 1-2 per day. Impacts experienced in the Desatoyas WSA are somewhat less since it lies outside restricted airspace and well away from Dixie Valley. Presently sonic booms are infrequent, however, when they do occur they can be heard in all four WSAs, either directly or as reverberations off surrounding mountain ranges.

In general, impacts on solitude caused by existing air operations tend to be localized, infrequent and of short duration. However, their intensity and the fact that they would continue after an area's designation as wilderness would cause an adverse impact upon solitude opportunities, especially in those areas bordering Dixie Valley.

Should the electronic warfare range be expanded and the SOA be approved, impacts upon solitude in the WSAs from 25-100 sonic booms daily would be severe. While accurate estimates of sonic boom impacts will not be available until the SOA draft environmental statement is released, it must be assumed that even "small" sonic booms occurring with the frequency currently being considered will significantly diminish solitude opportunities and be detrimental to the overall wilderness quality of the WSAs.

The Wilderness Management Policy contains no specific prohibition of overflight of wilderness by aircraft, however, low flight is to be discouraged and management plans are to provide for liaison with the proper military authorities. Congress would be the final arbiter with regard to this issue since it has the option of altering flight patterns and restricted airspace should it feel that it is necessary in order to protect the wilderness character of an area. Additionally, by the time any suitability recommendations are forwarded to Congress the effects upon solitude of the SOA, if approved, will be known.

In short, while the impacts upon solitude of existing naval air operations are relatively minor, such impacts will become quite significant if the Supersonic Operating Area is established.

Low level civilian flights include BLM fire detection and wild horse census/roundup flights as well as Nevada Department of Wildlife annual wildlife censuses. These are quite infrequent and do not impinge upon solitude opportunities.

2. Primitive and Unconfined Recreation

Opportunities for several types of primitive and uconfined recreational activities are present in all wilderness study areas. These are:

1) Hiking/backpacking
2) Sightseeing
3) Nature study
4) Bird watching
5) Photography
6) Camping
7) Picnicking
8) Rockhounding
9) Vegetative collecting
10) Hunting
    a. Deer/big game hunting
    b. Bird hunting
    c. Small game hunting
    d. Coyote/varmint hunting
11) Trapping
12) Rock scrambling/climbing
13) Horseback riding/packing

Unless these are especially noteworthy, or unless they contribute to an outstanding diversity of opportunities, no specific mention is made of them individually in the study area discussions which follow.

Component No. 2: Special Features: Quality of the Area's Optional Wilderness Characteristics

There are no generally applicable points under this component. These are discussed separately in each WSA analysis.

Component No. 3: Multiple Resource Benefits: The Benefits to Other Multiple Resource Values and Uses Which Wilderness Designation of the Area Could Ensure

Wilderness designation would ensure that the naturalness, outstanding opportunities for solitude and primitive and unconfined recreation, special features and other resource values in the WSAs would be maintained or enhanced over time.

In all study areas, several other resource benefits would result from wilderness designation. All of these are a consequence of preserving the areas in their natural condition. They are:

A. Watershed and Water Quality

Development of water sources would be limited by the Wilderness Management Policy (WMP), as would developments (other than some mining) that would impact the watershed. Restrictions on surface disturbing activities, such as off-road vehicle use and the use of heavy equipment in mineral exploration and development, would be beneficial to these watersheds by maintaining the overall good water quality and soil stability, while preventing potential increases in sediment production. Watershed protection and water quality will at least remain stable and possibly improve as a result of wilderness designation.

B. Air Quality

All designated wilderness will maintain a Class 2 air quality classification (unless upgraded by the State).

C. Wildlife

1. A controlled burn policy for wilderness areas would enhance wildlife habitat by providing a diversity of vegetative successional stages.

2. Since animal damage control programs are limited by the Wilderness Management Policy to removing only offending individuals, non-target animals will not be killed. (Hunting is permitted, subject to applicable state and Federal laws and regulations.)

3. Preserving the areas in their present natural state results in the preservation of habitats for most species. Seedings that would create monotypical habitat would be disallowed. Maintenance of the natural environment would also result in keeping disturbances of sight and sound to a minimum. Restricted development would be especially beneficial to lambing of Bighorn sheep in areas where they presently exist or might be reintroduced.

4. The use of pesticides, herbicides, poison baits, and other poisons and pollutants normally will be prohibited. This will prevent adverse biological consequences that are often caused by introduction of these substances into the food chain.

5. Riparian areas are significant in west-central Nevada because of their scarcity, and because of the abundance of wildlife and vegetation they support. If stream piping and/or channelization is prevented, crucial nesting habitat will be preserved resulting in population stabilization or slight population increases in species dependent on riparian habitat, such as Cooper's Hawk, Prairie Falcon, Goshawk, Great Horned Owl and Screech Owl.

D. Wild Horses

Wilderness designation would assure that wild horses would receive less harassment from vehicles. Closure of ways to vehicular access would provide more untraveled acres in which the horses could roam unmolested.

E. Recreation and Visual Resources

1. Designation would help protect the scenic quality of the areas because of the restrictive wilderness management policy toward development inside a wilderness.

2. Designation would provide legislative protection for important sites within the areas such as caves, mountain mahogany stands, scenic areas and raptor nesting areas.

3. Designation would help maintain areas in a natural condition, thereby preserving opportunities for non-motorized backcountry recreation.

4. If natural fire occurrences in pinyon-juniper areas are allowed to burn the ungulate populations would increase, benefitting hunting and viewing opportunities. The increase would result from the burning of pinyon-juniper cover and the subsequent growth of preclimax vegetation types, such as bitterbrush and serviceberry, that are desirable wildlife forage.

F. Cultural Resources

Wilderness designation will offer protection for archaeological resources--both known and potential--by limiting vehicular access. Wilderness users can, if properly educated, contribute information by reporting site locations where a survey has not taken place.

Component No. 4: Diversity in the National Wilderness Preservation System

Factor No. 1: Expanding the diversity of natural systems and features, as represented by ecosystems and landforms.

The ecosystems and landforms of the Lahontan WSAs fall into four major categories of the Bailey-Kuchler Ecosystems of the United States classification system. These categories are:

(a) 3130-21 Juniper-Pinyon Woodland (all WSAs)
(b) 3130-32 Great Basin Sagebrush (all WSAs)
(c) 3130-34 Saltbush-Greasewood (Job Peak & Stillwater Range WSAs)
(d) 3130-31 Mountain Mahogany-Oak Scrub (Clan Alpine & Desatoya WSAs)

Table 3 compares and summarizes ecosystem and landform diversity among WSAs in the Lahontan Resource Area, designated wilderness areas, areas which have been administratively endorsed and are now pending before Congress, and other WSAs which are possible sources of ecosystem representation.

TABLE 3
ECOSYSTEM AND LANDFORM DIVERSITY

ECOSYSTEM/LANDFORM			OTHER REPRESENTATIONS OF THE ECOSYSTEM								
No.	Name	Rep. in LRA	Designated Wilderness			Administratively Endorsed			Potential Sources of Representation		
			Agency	No. Areas	Total Acreage	Agency	No. Areas	Total Acreage	Agency	No. Areas	Total Acreage
3130-21	Juniper-Pinyon Woodland	Clan Alpine Range 120,770 acres	USFS-CA	3	43,168	USFS-NV	1	60,000	USFS-CA	11	433,384
						USFS-CA	4	52,640	USFS-NV	7	105,828
		Stillwater Range 51,530 acres				USFS-UT	1	17,530	BLM (Elko)	3	166,525
		Desatoya Mountains 36,512 acres				NPS-NV	1	35,000	*BLM (Winnemucca) (includes 108, Augustas)	3	85,577
		Job Peak 50,000 acres							BLM (Carson City) (Walker RA only)	2	29,640
									BLM (Ely)	13	336,815
									BLM (Las Vegas)	9	281,141
									BLM (Battle Mtn.)	10	482,960
									BLM (Bakersfield, CA)	7	82,962
									BLM (CDCA-CA)	12	90,095 (suitable acreage)
									BLM (Salt Lake, UT)	3	64,573
									BLM (Cedar City, UT)	3	24,118
									BLM (Richfield, UT)	7	137,509
	TOTAL	258,632		3	43,168		7	165,170		90	2,321,127

TABLE 3
ECOSYSTEM AND LANDFORM DIVERSITY

ECOSYSTEM/LANDFORM			OTHER REPRESENTATIONS OF THE ECOSYSTEM								
No.	Name	Rep. in LRA	Designated Wilderness			Administratively Endorsed			Potential Sources of Representation		
			Agency	No. Areas	Total Acreage	Agency	No. Areas	Total Acreage	Agency	No. Areas	Total Acreage
3130-31	Mountain Mahogany – Oak Scrub	Clan Alpine Range 1,100 acres Desatoya Mountains 750 acres									
	TOTAL	1,850		0	0		0	0		0	0
3130-32	Great Basin Sagebrush	Clan Alpine Range 74,258 acres	USFS-CA	2	7,020	USFS-NV	1	20,000	USFS-CA	12	140,430
						USFS-CA	4	6,830	USFS-NV	2	7,409
		Stillwater Range 30,850 acres				FWS-NV	1	611,180	BLM (Elko)	3	23,556
		Desatoya Mountains 14,000 acres							*BLM (Winnemucca) (includes 108, Augustas)	3	27,260
		Job Peak 30,000 acres							BLM (Carson City) (Walker RA only)	1	3,395
									BLM (Ely)	11	215,797
									BLM (Las Vegas)	5	315,425
									BLM (Battle Mtn.)	2	152,650
									BLM (Bakersfield, CA)	26	226,274
									BLM (CDCA-CA)	6	9,567 (suitable acreage)
									BLM (Richfield, UT)	1	6,406
	TOTAL	149,108		2	7,020		6	638,010		72	1,128,169

TABLE 3

ECOSYSTEM AND LANDFORM DIVERSITY

ECOSYSTEM/LANDFORM			OTHER REPRESENTATIONS OF THE ECOSYSTEM								
No.	Name	Rep. in LRA	Designated Wilderness			Administratively Endorsed			Potential Sources of Representation		
			Agency	No. Areas	Total Acreage	Agency	No. Areas	Total Acreage	Agency	No. Areas	Total Acreage
3130-34	Saltbush - Greasewood	Stillwater Range 12,407 acres	USFS-CA	2	19,554	FWS-NV	1	740	USFS-CA	2	2,876
						FWS-OR	1	30,000	USFS-NV	3	48,710
		Job Peak 10,209 acres							BLM (Winnemucca)	4	147,342
									BLM (Carson City) (Walker RA only)	1	55,980
									BLM (Ely)	1	11,663
									BLM (Burns, OR)	13	403,035
									BLM (Vale, OR)	5	130,500
									BLM (Lakeview, OR)	1	15,520
									BLM (Richfield, UT)	9	231,235
									BLM (Boise, ID)	3	75,549
	TOTAL	22,616		2	19,554		2	30,740		42	1,122,410

* NV-030-108, Augusta Mountains, is being studied and reported by the Winnemucca District.

Based upon Table 3 it appears that all four ecosystem categories are currently under-represented in the National Wilderness Preservation System (NWPS). The Great Basin Sagebrush ecosystem is well represented in Administratively Endorsed areas, however, the other three ecosystems are not. The only two WSAs in the nation listed as containing representation of the mountain mahogany-oak scrub ecosystem are found in the Lahontan Resource Area.

Generally, designation of any Lahontan WSAs as wilderness will contribute to the diversity of ecosystems in the NWPS.

Factor No. 2: Assessing the opportunities for solitude or primitive recreation within a day's driving time (five hours) of major population centers.

Two Standard Metropolitan Statistical Areas (SMSA) lie within five hours driving time of all four WSAs. Sacramento, California, is about 260 highway miles from the WSAs while Reno, Nevada, is approximately 125 road miles from the WSAs.

The difference in distance between the WSA which is furthest west (Job Peak) and the one which is easternmost (Desatoya Mountains) is not a major concern since the best means of access to each WSA places them approximately equidistant from the respective SMSAs. The west side of the Job Peak and Stillwater Range WSAs might possibly be reached in five hours driving time from the Stockton, Yuba City and Modesto SMSAs, however, the best access to these WSAs places them another 30 minutes away. In addition, the most direct routes between the WSAs and Stockton and Modesto are closed by snow five to six months each year. For these reasons, these three SMSAs were not considered during analysis of this factor.

Table 4 shows the number of roadless areas under wilderness consideration and the number of designated wilderness areas within 200 air miles (approximately 250 road miles or 5 hours driving time) of the Sacramento and Reno SMSAs.

Factor No. 3: Balancing the geographic distribution of wilderness areas.

Only one designated wilderness area exists in Nevada and it lies well beyond one day's driving time of the two SMSAs of concern. Four areas (190,410 acres) administratively endorsed for designation as wilderness are found in western and west-central Nevada.

All designated wilderness areas and all administratively endorsed wilderness study areas, except the four mentioned above, found within the general geographic vicinity of the resource area WSAs are located in California, primarily in the Sierra Nevada. Even though these areas are within the same geographic region it should be noted that their ecosystem and landform types are, in general, considerably different than those found in the Lahontan Resource Area WSAs.

TABLE 4
WILDERNESS AND WILDERNESS STUDY AREAS WITHIN A DAY'S DRIVING TIME (5 HOURS) OF MAJOR POPULATION CENTERS

SMSA	Designated Wilderness			Administratively Endorsed			BLM WSAs			Other Agency WSAs		
	State	No. of Areas	Total Acreage	State	No. of Areas	Total Acreage	State	No. of Areas	Total Acreage	State	No. of Areas	Total Acreage
Reno, NV	CA	12	1,139,560	CA	29	386,200	CA	49	557,324	CA	53	1,413,431
				NV	3*	189,640	NV	38	2,191,742	NV	4	38,860
Sacramento, CA	CA	14	1,323,065	CA	24	1,762,461	CA	30	403,809	CA	62	1,345,299
							NV	11	607,120	NV	2	18,860

* Anaho Island (740 acres) is not included since there is limited access to the island.

Within roughly a one day's drive of the Reno SMSA there are 144 areas, totaling approximately 4.2 million acres, currently under study for possible wilderness designation. About 30% of the areas and 53% of the acreage are in Nevada.

Conclusion:

Application of the diversity criterion to the Lahontan WSAs yields mixed results. Several designated wilderness areas and administratively endorsed WSAs are within one day's driving time of the two affected SMSAs. However, there is very little representation within these areas of the four ecosystems found in the Lahontan WSAs. Ecosystem representation in the NWPS would be enhanced by the designation of any Lahontan WSA as wilderness. Likewise, geographic distribution of statutory wilderness and administratively endorsed areas is heavily skewed toward California and the Sierra Nevada. West-central Nevada is currently under-represented geographically in the NWPS.

Criterion No. 2: Manageability

There are no generally applicable points under this criterion. Each individual WSA analysis addresses this criterion specifically.

QUALITY STANDARDS

Standard No. 1: Energy and Mineral Resource Values

The Stillwater Range, Job Peak, Clan Alpine Mountains, and Desatoya Mountains Wilderness Study Areas (WSAs) are located within the Basin and Range physiographic province and occur within portions of north-northeast trending linear mountain ranges. Rocks exposed within the WSAs range in age from Late Triassic to Quaternary. Triassic and Jurassic fine-grained clastic sedimentary rocks are the most widespread units of the Mesozoic Era. Jurassic mafic igneous rocks and Cretaceous granitic rocks are less common. Volcanic rocks, with minor intrusive equivalents, are the chief units of the Cenozoic Era.

Three major tectonic events are recognized in these rocks: (1) Middle Jurassic folding and thrust faulting, with associated volcanism, (2) Middle Jurassic to Miocene folding, and (3) Quaternary normal faulting.

Energy and mineral deposit types include copper-bearing contact metamorphic deposits, mineralized explosion breccias, epithermal base and precious metal-bearing quartz veins, hydrothermal tungsten, tungsten-mercury deposits, strata-bound volcanogenic deposits, hydrothermal fluorspar deposits, and water dominated geothermal systems.

No significant production of energy and mineral resources is occurring within the WSAs, however, operations such as the Fisk-Robertson gold mine are located just outside the boundaries.

Moderate production of metallic and nonmetallic minerals has occurred in the past from the twelve mining districts located within the WSAs. Gold, silver, antimony, tungsten, copper, iron, lead, and fluorspar have been produced to date. Exploration for precious metals is quite active and accounts for more than ten operating plans per year. Companies currently active include ASARCO, Texaco, Inc., Fischer-Watt Mining, Tundra Gold Mines Ltd., Oasis Mining, and Anaconda.

The majority (75-88%) of the lands within the four WSAs are rated moderately favorable for the occurrence of metallic minerals and geothermal resources (GEM, 1983). High favorability lands have also been identified, but are much less extensive. Favorability for nonmetallic minerals, oil and gas, and other energy resources is generally rated low (GEM, 1983).

Strategic and critical materials occurring within WSAs include antimony, tungsten, copper, silver, lead, and fluorspar (GEM, 1980).

Energy and mineral encumbrances within the WSAs include 1,280 mining claims, 32,000 acres under geothermal lease, and 147,900 acres under oil and gas lease. No mining claims or geothermal leases occur within the Desatoya WSA. Mining claims are located in a random pattern within the WSAs primarily around areas of past mineral prospecting. Geothermal leases are located along the flanks of the mountain ranges, especially the east side of the Stillwater Range and Job Peak WSAs. Oil and gas leases are located randomly throughout the WSAs, notably in the northern half of the Clan Alpine Mountains WSA, the extreme northern part of the Desatoya Mountains WSA, and on the east side of the Stillwater Range and Job Peak WSAs. No oil and gas and only moderate geothermal lease operations have occurred to date.

A U.S. Geological Survey/Bureau of Mines mineral survey will be conducted for all study areas recommended as preliminarily suitable for preservation as wilderness.

Standard No. 2: Impacts on Other Resources

A. Recreation

Adverse impacts on recreational opportunities are few, but include the following:

1) ORV use will be restricted to existing cherrystem roads. ORV use inside a designated wilderness will be prohibited.
2) Designation will likely result in an increase in recreation use by calling attention to an area. This could result in crowding at destination points (e.g., springs, streams, caves, mountain tops, ridge lines) along travel routes and at staging areas near wilderness boundaries.
3) Commercial trapping will be prohibited. Incidental trapping, if it is not the trapper's sole source of livelihood, is permitted.
4) Hunters who currently rely on vehicle access may find that they will have to walk to certain areas where they previously drove.

B. Range

Ranching interests in wilderness areas will experience some adverse impacts if the operator is required to use horses for activities that had previously been performed by motorized vehicle. Costs of livestock management and maintaining range developments in those locations where vehicular access is curtailed may increase. New rangeland improvements will not be allowed solely on the basis that they will aid intensive management resulting in increased grazing, but must show that they would protect resource values. Table 5 shows current livestock use in the WSAs in the Lahontan Resource Area.

C. Forestry

The forestry resource will be impacted in any designated wilderness area, though not to a significant extent:

1) Woodcutting will be prohibited, which narrows the range of management possibilities for the resource. The Clan Alpine and Desatoyas WSAs contain a total of roughly 13,090 acres suitable for cordwood sales. However, it is not expected that the quantity of cords demanded will exceed the number of cords available outside the WSAs by 1990. (See Appendix B and the individual reports for these two areas in Section III for additional information.)
2) Christmas tree cutting will be prohibited. The impact on this activity will be minimal since trees within the WSAs are generally average or have poor form.
3) Commercial pine nut gathering would be prohibited. The last commercial sale within one of the WSAs occurred in 1981 when 9000 pounds of pine nuts from the Desatoya and Clan Alpine Mountains were sold.

D. Cultural

The cultural resources program may experience some negative impacts from wilderness designation. Access to and development of cultural sites for educational purposes will not be allowed. Costs of conducting archaeological research may increase, since new roads cannot be built and laboratory and living quarters will have to be located outside of the wilderness areas.

E. Lands

New rights-of-way normally will not be permitted unless they would satisfy the non-impairment criteria. Access to private inholdings is assured and no restrictions would be placed on development of private parcels. If private landowners wish, land exchanges for parcels outside a wilderness area could occur.

F. Energy and Minerals

Impacts to the geology, energy, and minerals programs resulting from wilderness designation are: 1) segregation of public lands against appropriation or disposition under the mining laws, mineral leasing laws, and other mineral disposal authorities, 2) constrained energy and minerals operations on pre-designation leases and valid mining claims, 3) constrained prospecting activities on unappropriated lands, and 4) the preclusion of energy and mineral developments on newly discovered deposits.

Additional detail regarding these impacts may be found under the discussion of the Resource Protection alternative in Chapter 4 of the Lahontan RMP.

TABLE 5
LIVESTOCK USE* IN LAHONTAN RESOURCE AREA
WILDERNESSS STUDY AREAS

WSA	ALLOTMENTS	NUMBER OF PERMITTEES	AUTHORIZED SEASON OF USE IN THE ALLOTMENT	ACTUAL SEASON OF USE WITHIN THE WSA
102 Clan Alpine Range	Clan Alpine	1	Apr 15 - Dec 15	SP SU F
	Cow Canyon	1	May 1 - Oct 15	SP SU F
	Dixie Valley	1	Year Round	SP SU F
104 Stillwater Range	Boyer Ranch	1	Year Round	SU F
	Copper Kettle	1	Year Round	SP SU F
	Dixie Valley/ Hare Canyon/ Mississippi Canyon	1	Year Round	SP SU F
	White Cloud	1	Year Round	SU F
110 Desatoya Mountains	Clan Alpine	1	Apr 16 - Dec 15	SP SU F
	South Smith Creek (Battle Mt.)	1	Apr 15 - Oct 31	SU F
	Eastgate		Apr 15 - Oct 31	SU F
	Porter Canyon (Battle Mt.)	1	Year Round	SP SU F
	Edwards Creek		May 1 - Mar 31	SP SU F
127 Job Peak	Dixie Valley	1	Year Round	SP SU F
	Frenchman Flat	1	Nov 1 - Mar 31	W SP
	La Plata/ Mtn. Well	1	Year Round	SP SU F
	White Cloud	1	Year Round	SP SU F

SP = spring
SU = summer
F = fall
W = winter

* All current use is by cattle

Source: Range Management Grazing Record Master

G. Wildlife

Some increased disturbance could occur to wildlife as a result of increased recreation use in designated areas. This would be especially true in riparian zones which are attractive to the recreationist and essential to wildlife. These impacts could be minimized though through well-developed wilderness management plans.

H. Others

No significant adverse impacts will result to water quality, wild horses, air quality or soil quality.

Standard No. 3: Impacts of Nondesignation on Wilderness Values

Other than wilderness, no new designation for the four WSAs is anticipated at this time. Should portions of the Desatoya WSA around Big Dens Canyon and the Clan Alpines WSA around Cow and Deep Canyons not be designated as wilderness the possibility of an ACEC designation for these areas may be explored at a later date.

There will be reduced opportunities for solitude and primitive and unconfined recreation in those areas accessible to off-road vehicles.

Primitive and semi-primitive non-motorized recreation opportunities would experience adverse impacts in the long-term in areas found to be unsuitable for designation.

Nondesignation would leave wilderness study areas open to mineral location, which could progress to full-scale mining. Existing mining and leasing (geothermal and oil and gas) activities would continue and possibly expand.

Normal exploratory practices, particularly drilling for oil, gas and geothermal resources, could severely damage the mandatory wilderness characteristics of naturalness and solitude. This is especially true for areas not presently accessible by existing roads. The early stages of mining under 43 CFR 3809 would have impacts very similar to those resulting from drilling, and could ultimately create far greater impacts. Surface damage from these activities would remain indefinitely in the dry climate of west-central Nevada.

Firewood and Christmas tree cutting could be permitted in those study areas not designated as wilderness. Impacts from these activities would vary, depending on the frequency and intensity of harvest and whether or not road access is available. Construction of new roads obviously would intensify the impacts of such activities, and naturalness, solitude and primitive recreation opportunities would be adversely impacted.

Standard No. 4: Public Comment

Comments received throughout the initial and intensive wilderness inventories included those that supported WSA classifications because of the outstanding qualities of the areas as well as those that disagreed with that assessment. The latter stated that the areas are roaded, there is good oil and gas, geothermal, and mineral potential, and that the areas lack outstanding characteristics. Protests were received from sixteen individuals or agencies. After these were evaluated and decisions on these protests were announced, six appeals were filed with the Interior Board of Land Appeals (IBLA) opposing designation of the four areas as WSAs. All of the appeals were decided in favor of the Bureau, with the last appeal being denied in June, 1982.

Comments received during the RMP scoping process also were generally from those either opposing or supporting wilderness designation of the WSAs. One faction expressed concern about withdrawal of the area from mineral entry exploration and development and worried about impacts to the ranching sector. The other group supported either the Mid-Range or Resource Protection alternative, citing the quality of the four areas wilderness characteristics and the need to preserve areas such as those in the National Wilderness Preservation System.

Standard No. 5: Local Social and Economic Effects

The four WSAs are utilized for livestock grazing by nine permittees. These lands are important economically to these individuals, and the social aspect of the ranching way of life is very important to these ranchers and Churchill County as a whole.

The opportunity for an individual or a company to prospect, locate minerals, and/or explore for oil and gas is also held in great regard by the residents of Churchill County. Therefore, many local people philosophically disagree with wilderness designation because it would, in most cases, restrict or preclude such actions.

Please see Appendices B and C of this report and Chapter Four of the RMP for more detailed information regarding this standard.

Standard No. 6: Consistency with Other Plans

Wilderness designation is consistent with FLPMA and the Nevada Statewide Comprehensive Outdoor Recreation Plan (SCORP). For example the SCORP says that the State of Nevada should:

1) preserve a representative cross section of Nevada's roadless, undeveloped areas in wilderness, and
2) offer positive support to federal agencies charged with recommending areas for inclusion in the National Wilderness Preservation System.

The General Plan for Churchill County does not specifically address the subject of wilderness designation, however, the county commissioners have consistently gone on record as opposing designation of any land in the county as wilderness. Likewise, the Fallon Naval Air Station has consistently opposed wilderness designation, citing the belief that existing air operations eliminate solitude opportunities and that such designation could constrain air warfare training activities at some future date.

CLAN ALPINE MOUNTAINS NV-030-102

The Clan Alpine Mountains WSA lies in the north central portion of Churchill County, Nevada, approximately 70 miles by road northeast of Fallon, Nevada. This WSA contains 196,128 acres of public land and is located within the Clan Alpine Planning Unit of the Lahontan Resource Area. There are no private inholdings within the WSA.

The WSA boundary is formed primarily by roads documented during the intensive inventory process. On the east side a short stretch of the boundary follows a legal description in order to eliminate mining activity around Tungsten Mountain. Another short segment of the boundary follows a man-made ditch between Cherry Creek and Florence Canyon. For roughly 12 miles on the north and west sides of the unit the boundary consists of a legal description. This boundary was established in order to eliminate extensive geothermal exploration activity which had resulted in significant surface disturbance. In Hoyt, Bernice and Dyer Canyons the boundary follows topographic contour lines, private property lines and a legal description for a short distance so as to omit areas of concentrated mining activity.

The best access to the WSA is provided by county road 376 and the War Canyon Road on the east side of the unit, the Bench Creek and Camp Creek Roads on the south and the Dixie Valley highway (county road 380) on the west. Roughly 2½-3 hours are required to drive to the study area from Reno, Nevada, the nearest metropolitan area.

The WSA is dominated by Mount Augusta (9966 feet) and Mount Grant (8847 feet). Mount Augusta is the second highest peak in Churchill County and the highest peak in the Clan Alpine Mountains.

The topography is very rugged and mountainous throughout most of the WSA. Uses of the area include recreation, grazing, mineral exploration and harvesting of forest products.

Criterion No. 1: Evaluation of Wilderness Values

Component No. 1: Quality of the Area's Mandatory Wilderness Characteristics

A. Naturalness

The majority of the Clan Alpine WSA is in an essentially natural condition. However, the perceived naturalness of certain portions of the WSA are negatively impacted by human activities which are adjacent to the study area.

Within the WSA itself evidence of man's activities is minimal with the exception of ways. In an area of over 190,000 acres man-made intrusions include thirteen developed springs, one reservoir and one well, one pipeline three miles in length and two other pipelines each less than 200 yards in length, and nine miles of fenceline (much of it gap fence) spread among sixteen separate locations. The impact of these intrusions is relatively insignificant in an area of this size.

Within the WSA there are 39 miles of ways divided among 35 separate segments. This figure is slightly higher than stated in the intensive inventory report, however, it is more accurate. Most of these ways are relatively short, are found around the periphery of the study area and extend into the interior from the boundary. About a third of them extend beyond the end of a cherrystemmed road. The most significant impacts upon naturalness are created by the ways at the ends of the Cow Canyon (W-10 and W-11) and Deep Canyon roads (W-7 and W-8). These four ways protrude well into the heart of the study area, almost two miles past the end of the road in one case (W-8).

Fourteen cherrystem roads, totaling 41.3 miles, penetrate the WSA from every side except in the extreme northeastern portion of the area. These cherrystemmed roads and their lengths are as follows:

Bench Creek South (R-8)	.90 miles
Bob Canyon (R-1)	.75
Byers Canyon (R-14)	10.10
Camp Creek (R-9)	2.40
Cherry Valley (R-11)	3.25
Cow Canyon (R-4)	6.00
Deep Canyon (R-3)	1.90
Dyer Canyon (R-2)	2.25
Florence Canyon (R-10)	4.20
Grover Canyon (R-5)	1.80
Horse Creek (R-7)	.90
North Fork, War Canyon (R-12)	1.25
Paiute Canyon (R-6)	4.20
Willow Springs Canyon (R-13)	1.40
TOTAL	41.30 miles

As can be seen from Map 3, several of these roads extend deeply into the WSA. One goes almost to the top of Mount Grant (R-14) and another comes within a mile of the summit of Mount Augusta (R-11), the two most prominent features of the WSA. In addition, three peninsula-like areas excluded from the WSA - Hoyt/Bernice Canyons, Stone Canyon/Tungsten Mountain, Railroad Ridge/Cherry Valley - have eliminated substantial acreages because of either intensive mining activity or connecting cherrystem roads. The impact of these roads and excluded areas upon naturalness is relatively minor due to the highly dissected topography and good vegetative screening in the surrounding vicinity. However, their impacts upon solitude and manageability are another matter and are addressed below.

At the extreme south end of the study area is the Camp Creek woodcutting area. The apparent naturalness of approximately 4545 acres of this 8960 acre cutting area had been adversely impacted by the time the intensive inventory was completed. This area probably should have been excluded from further wilderness consideration at that time, however, policy direction was somewhat ambiguous with regard to the establishment of WSA boundaries in such instances. It was decided therefore to exclude only the acreage between the two main roads leading into the area (475 acres) and resolve the issue during the study phase. This is discussed in greater detail in the Manageability section of this report.

Outside sights and sounds that impact the apparent naturalness of the area include County Road 380 (Dixie Valley Road) and County Road 376 (Alpine Road). Dust clouds created by car and truck traffic on these roads frequently may be seen from the higher elevations in the WSA, however, the sounds of this traffic are seldom if ever heard. Infrequent traffic on the cherrystemmed roads creates similar impacts. Mining activity in areas adjacent to the study area may be both seen and heard inside the WSA. This is particularly true in the areas around Bernice and Hoyt Canyons and to a somewhat lesser extent around Dyer and Stone Canyons. These impacts are generally confined to the area immediately surrounding the activity since much of the work is taking place along the bottoms of drainages and the natural screening provided by the topography and vegetation is good to excellent. Old road and mining scars north of Mt. Augusta and around Mt. Grant have a negative impact on apparent naturalness, particularly since the areas surrounding them have poor vegetative screening.

Geothermal and oil and gas exploration in Dixie Valley has, in the past, created impacts outside the WSA which can be seen and heard inside the area, primarily along the ridgelines. Such exploration is currently suspended, however, it will quite likely resume when economic conditions improve.

Range developments, such as spring developments and fencelines, require periodic maintenance. Maintenance periods vary, although yearly maintenance is not uncommon. Motorized access will sometimes be necessary. Access by vehicles and use of motorized equipment along cherrystem roads will contribute as outside sights and sounds to the impacts on naturalness.

Conclusion

The Clan Alpine Mountains WSA remains in an essentially natural state. Range improvements are relatively few in number and widely spaced throughout the unit. Those roads and ways which penetrate deeply into the study area and the sights and sounds of mining activity outside the WSA affect the apparent naturalness in those areas immediately surrounding them with areas around mining activity experiencing the most profound impacts. In general, the vast majority of the acreage within the study area remains in a natural condition.

B. Outstanding Opportunities for Solitude and Primitive and Unconfined Recreation

1. Solitude

The size (196,128 acres) of the study area is quite conducive to outstanding opportunities for solitude. The Clan Alpine Mountains WSA is about thirty miles long and ranges from seven to fifteen miles in width. The configuration of the WSA presents some difficulties with regard to solitude opportunities due to the three peninsula-like intrusions mentioned earlier as well as several cherrystem roads penetrating the interior of the study area. Because of the study area's large size these intrusions are not as significant as they might be in a smaller WSA, however, they would restrict free movement in the sense that users taking trips along the length of the area occasionally would have to go out of their way to avoid them.

Topographic and vegetative screening range from fair to excellent. The gently rising, shadscale and sagebrush covered fans between the eastern and western boundaries and the beginning of the mountainous terrain provide almost no topographic screening. Virtually all the rest of the WSA is highly dissected with over twenty named canyons and dozens of unnamed ones winding their way through the study area. All of the named canyons have intermittent streams in them and Byers, Dyer, Bench, Horse and Florence Creeks are perennial streams. The main north-south trending ridge line, which is wider and more highly dissected than in the Stillwaters but less well-defined, is approximately thirty miles long and consists of both open, gentle ridges and steep-sided peaks. Elevation changes dramatically from 3760' in Dixie Valley to 9966' at the highest point, Mt. Augusta. In general, the area may be characterized as rugged, mountainous and possessing excellent topographic screening.

Vegetative screening varies widely in the area. Along the alluvial fans and in the higher elevations screening is minimal. Here low growing plants such as low sagebrush, rabbitbrush, shadscale (on the fans) and various grasses predominate.

Pinyon-juniper associations cover approximately 50% of the WSA at the middle elevations and upper drainages. Small pockets of riparian vegetation are found along the perennial streams and in a few canyons with intermittent streams. Likewise, scattered stands of mountain mahogany (almost always under 10 acres in size) are found at the higher elevations near the pinyon-juniper timberline. In these locations vegetative screening is good to excellent.

Opportunities for a visitor to find a secluded spot are closely related to topographic and vegetative screening. The middle elevations of the WSA afford the best opportunities to experience a sense of seclusion and solitude due to the deeply incised terrain and the excellent vegetative screening. The small alluvial fans found along the east and west boundaries offer virtually no opportunity for a visitor to find a secluded spot. Secluded locations would be somewhat more difficult to find at the higher elevations than at the middle elevations, due to the lack of vegetative screening. However, the numerous interesting peaks and natural features scattered throughout this area would likely cause use of this portion of the WSA to be dispersed, thus having a positive effect upon a visitor's sense of seclusion. Coupled with the generally good topographic screening found here, users of the area should be able to find secluded spots with only minor difficulty.

The greatest potential on-the-ground impacts upon solitude would result from those cherrystem roads and peninsula-like areas, excluded from further study, which extend deeply into the study area. Although traffic on the cherrystem roads in Cow, Deep and Byers Canyons is light, the fact that these roads permit vehicular access well into the interior of the WSA could have a definite negative impact on solitude opportunities of individuals in the immediate area. Persons who may have spent several hours reaching the interior by foot or horseback and feel they are deep into the wilderness would probably find it extremely disconcerting to find a vehicle there ahead of them. Mining activities in the Hoyt-Bernice Canyon and Stone Canyon-Tungsten Mountain areas could probably be avoided by wilderness users although sounds from their operations may occasionally be heard inside the study area.

Visitors would find it more difficult to avoid the Cherry Valley-Railroad Ridge area, especially if they were making a north-south journey along the main ridge of the WSA. Although it is unlikely that other resource uses incompatible with wilderness preservation objectives would occur in this area, the roads here are in generally good condition and are used by the grazing permittee roughly twice a month during the 7-8 month grazing season. Use of these roads increases substantially during the hunting season. The generally open character of Cherry Valley, combined with the fencelines, roads, and grazing use the area receives, would impinge upon the feeling of solitude which a visitor traversing this area might otherwise experience.

The impacts of aircraft overflights on the WSA are discussed in Section II.A., of this report. Periodic servicing, by helicopter, of two small solar-powered radar sites which the Navy proposes to install near the western boundary and on top of Mt. Augusta would cause a significant impact, at the time of servicing, on the solitude experienced by a visitor to the immediate area. Such servicing would take approximately 30-45 minutes once a month (see Criterion No. 2: Manageability).

Localized and seasonal ranching activities (e.g. round-ups, salting, maintenance of range improvements) create minor impacts on solitude.

Geothermal exploration adjacent to the WSA in Dixie Valley has temporarily ceased, primarily due to economic conditions. If and when it resumes, the sight of drilling equipment and the attendant noise associated with this activity could adversely affect solitude opportunities on the west side of the WSA.

2. Primitive and Unconfined Recreation

Day hiking opportunities are good due to the numerous interesting canyons and attractive features at the middle elevations. Game trails can be found in many of the major drainages and can be used as travel routes. Areas of dense vegetation may present a challenge to hikers but it would still be possible to complete an interesting trip in one day.

Backpacking, horseback riding and camping opportunities are excellent. The main ridge line is over thirty miles long and several peaks are over 8000' elevation. The terrain is diverse, the surroundings quite scenic and shade and water are generally available. The rugged topography and large size of the study area provides a challenging environment for these activities and lengthy trips into the area would be quite possible. Numerous scenic camping spots are located throughout the unit. Roads near both Mount Augusta and Mount Grant, the two highest peaks in the range, detract somewhat from the quality of these opportunities in the immediately surrounding areas.

Deer hunting is only fair due to relatively low populations. Sage grouse hunting, once considered excellent in the area around Cherry Valley, has declined sharply in the last two years primarily because of habitat degradation caused by excessive grazing. Horse Creek has been stocked with rainbow and brown trout, however, the stream is small and could withstand only limited fishing pressure.

Approximately eight miles of high elevation ridges around Mount Augusta offer fair to good opportunities for cross-country skiing and snowshoeing for three to four months a year. Access to the snow is difficult though and would require either hiking or use of a four-wheel drive vehicle.

Sightseeing, bird watching, nature study and photography opportunities all are excellent within the WSA. The landscape is quite diverse and contains a number of interesting, attractive features including deep, dry washes and intermittent stream beds, five perennial streams, gently undulating high ridges, steep mountain peaks, isolated springs and small riparian areas, and colorful geologic formations. Although few locations display the type of spectacular beauty which characterizes individual canyons in a study area such as the Desatoya Mountains, the overall character of the study area is extremely scenic and its large size provides a vast expanse in which several different types of landscapes are found.

A variety of animals including mountain lion, mule deer, sage grouse, golden eagles, prairie falcons and wild horses can be seen in the WSA. Views from the top of the range are extremely scenic. The Desatoya, New Pass and Toiyabe Ranges are visible to the east and the Stillwater Range lies across Dixie Valley to the west. On a clear day the Sierra Nevada, nearly 100 miles to the west, may be seen.

Conclusion

Opportunities for solitude and primitive and unconfined types of recreation are excellent. The immense size and generally good natural screening in the area provide numerous opportunities for a visitor to experience feelings of seclusion and solitude. The configuration of the study area is far from ideal and the cherrystem roads which penetrate deep into its interior could cause adverse impacts in those areas immediately surrounding them, however, solitude opportunities in the vast majority of the WSA are unaffected by these difficulties. A good diversity of recreational opportunities are available and many of these are individually outstanding.

Component No. 2: Special Features: Quality of the Area's Optional Wilderness Characteristics

No threatened or endangered species are known to occur within the WSA, although the presence of mountain lions and numerous raptors, including golden eagles, are an important ecological value. The WSA is also historical range for Desert Bighorn sheep. Studies are currently in progress by the NDOW to evaluate the reintroduction potential of this area for bighorn sheep. There are approximately 800-900 wild horses living in the study area.

Geologically, the present configuration of the range is a result of block faulting, much of it quite recent from a geologic standpoint. The western margin of the range is underlain by Tertiary volcanic rocks along much of its length and the range itself contains contrasting formations of these rocks. Extrusive rhyolite and rhyodacite comprise the majority of the unit with smaller areas of Triassic siltstone, gabbroic rocks, basalt and granite. The northern end of the WSA contains colorful rocks and interesting structures exposed along nearly vertical fault scarps.

As discussed above, the area is highly scenic. From atop the ridgeline of the Clan Alpine Mountains the Sierra Nevada can be seen 100 miles to the west. The New Pass and Desatoya Ranges lie to the east in front of the Toiyabe Range, rising behind them 40 miles away. These broad vistas greatly enhance the feeling of isolation and solitude within the WSA. There are also numerous canyons, geologic formations, ridges and other spots throughout the interior of the WSA which are quite scenic. Combined with the large size of the area, impressive views are frequently available to persons traveling inside the study area.

The historic rock ruins of the Clan Alpine mining camp are located on private land along the boundary at the mouth of Cherry Creek. This camp was established in 1866 and was later used as an agricultural settlement.

Very little archaeological investigation has taken place inside the study area to date, however, that which has been done indicates the area may be quite rich from a cultural standpoint. In addition to several lithic scatters, aboriginal rock shelters have been found in the area around Cow Canyon. It would be difficult to estimate the number of sites which might be found in the WSA due to its large size, diversity of land forms and the limited amount of research done to date.

Conclusion

There are several special features worth noting in the study area, although it is unlikely that any of them are of national significance. The scenic quality of the study area and the opportunity to view wild horses is well known to a fairly large local public.

Component No. 3: Multiple Resource Benefits: The Benefits to Other Multiple Resource Values and Uses Which Wilderness Designation of the Area Could Ensure

The standard list of benefits to other resources listed in Section II.A., will result if the Clan Alpine Mountains WSA is designated as statutory wilderness. These benefits result from the maintenance of present, undisturbed conditions, and would accrue to wildlife, wild horses, watershed, air quality, scenic quality, cultural resources and recreation.

Component No. 4: Diversity in the National Wilderness Preservation System

This component is discussed at length in Section II.A., of this report. It is important to once again note though that this WSA is one of only two in the nation, both in the Carson City District, which are listed as having representation of the 3130-31, Mountain Mahogany-Oak Scrub ecosystem.

Criterion No. 2: Manageability

The basic thrust of management for the Clan Alpine Mountains study area, should it be designated as wilderness, would be to provide opportunities for primitive recreation and solitude in an essentially undisturbed natural setting.

Due to the large size of the area, the numerous access points around it, and the fact that there are interesting features scattered throughout, it is unlikely that any one location will receive a concentration of use as a trail head in the short-term. As the area becomes more well-known, however, it is likely that many users would utilize the War Canyon road to gain access to Cherry Valley and the central ridge and begin their trips both north and south from this point, rather than climb or horsepack all the way to the top of the range from the valley floor. This situation would have to be closely monitored and it is quite possible that management prescriptions would have to be instituted in this area, both to control use and to protect the range improvements found in this location.

Hunters who presently gain access to the area by motorized vehicle would need to be informed of the new management emphasis. In the short-term there may be some animosity against wilderness designation of the area displayed by these individuals, especially if any road restrictions or closures are implemented. Placement of signs and patrolling of the area during hunting season would be necessary. A positive public relations and education effort should be able to alleviate this problem in the long-term.

Because of the area's large size and numerous cherrystem roads, it will be difficult to control access and/or off-road vehicle (ORV) use. The topography itself is a limiting factor with respect to ORV use in many areas, however, any roads which remain open to the general public will continue to be used, as will the ways leading off of them, unless they are effectively closed. From a manageability standpoint, it would be quite advantageous to physically close one road and as many ways as possible and limit use on at least three roads to those individuals who need to use them for access to existing mining activity or for range management purposes. Roads with restricted access could remain open, on a limited basis, to the BLM for administrative purposes.

The area around the old mining road south of Cherry Valley (R-11, 3.25 miles of road) would benefit from a total road closure. No mining claims now exist in the area previously disturbed by mining activity and this road is not required for access to any range improvements. The road serves no apparent purpose and constitutes an eyesore and intrusion upon the naturalness of the area.

It is recommended that restrictions upon the use of the following roads be instituted should the study area be designated as wilderness:

A) R-14, Byers Canyon (8.4 miles)
From a point roughly 1.7 miles northwest of county road 376, use of this road could be restricted to the grazing permittee and the mining claimant. The road penetrates deeply into the heart of the study area almost to the top of Mount Grant (one of the key features of the area) and its continued use by the general public would be detrimental to the wilderness values of the surrounding area as well as present possible management problems (e.g. illegal ORV use, vandalism).

B) R-3, Deep Canyon and R-4, Cow Canyon (6.4 miles)
Use of these roads could be limited to the grazing permittee from the point where the two roads join, approximately 1.5 miles southeast of the western boundary. These roads and their associated ways penetrate well into the center of the study area and, like the Byers Canyon road, use of them by the public would threaten the wilderness values of the surrounding area and present similar management difficulties.

Certain boundary adjustments would be desirable from a manageability perspective. These are as follows:

A) Hoyt Canyon North
An old switchback road, now a way (W-35), somehow overlooked during the intensive inventory exists in this area and causes a significant visual scar. By drawing the boundary along the ridgeline in Sections 11 and 12, T. 22 N., R. 37 E., this unnatural area would be removed from further wilderness consideration and approximately 870 acres would be deleted from the study area.

B) Deer Lodge - Meadow Spring Canyon Area
This boundary is currently impossible to find on-the-ground. By moving this boundary such that it follows the east side of Sections 25 and 36, T. 22 N., R. 36 E. and Section 1, T. 21 N., R. 36 E. south of the Dyer Canyon road (R-2), proceeds west along the top of sections 11 and 12, T. 21 N., R. 36 E., and then south to the Cow Canyon road (R-4) along the west side of Sections 11 and 14 in the same Township and Range, the boundary will become much more readily identifiable and a cherrystem road would be eliminated from the study area. No area with important wilderness characteristics would be eliminated and the boundary would be effectively drawn back to the base of the mountain range and the mouth of Cow Canyon. Approximately 2100 acres would be deleted from the study area.

C) Grover Point - Grover Canyon

Much of this boundary segment also cannot be located on the ground. The topography of the area is not conducive to locating the boundary on geographic features, so it is recommended that the boundary proceed south from the main road in Section 24 through the middle of Sections 24 and 25, T. 21 N., R. 35 E., and across the top of Sec. 36 to the Grover Canyon road (R-5). This would eliminate old trails in Sections 24 and 25 and then tie into the Grover Canyon road at a section corner which has been located previously on the ground. Approximately 316 acres would be deleted from the study area.

D) Horse Creek - Bench Creek

When the final intensive wilderness inventory maps were printed, an error was made in the alignment of the boundary between Horse Creek and Bench Creek Ranches. This boundary should have been shown proceeding south between Sections 23 and 24, T. 19 N., R. 35 E. to the point where it meets the road, then southeast to Bench Creek Ranch along the road itself. This follows existing roads except for 1.2 miles, whereas the boundary shown on the published map follows a legal description for 1.9 miles. In addition, the road north of Bench Creek Ranch goes through heavy timber and is difficult to locate on the ground, as is the protracted boundary line from the end of this road over to the section line. Approximately 1052 acres are involved in this action although no addition or deletion of acreage would take place since this acreage was included in the WSA at the time the final intensive inventory decisions were announced and since this simply corrects a mistake on the published maps.

E) Camp Creek

At the extreme south end of the study area is the Camp Creek woodcutting area. Approximately 8000 acres of this 8960 acre cutting area are located within the WSA. (Roughly 485 acres were outside the initial inventory boundary and 475 acres were deleted during the intensive inventory). This woodcutting area has been in use since November, 1975, well before the passage of FLPMA and the start of the wilderness inventory.

By the time the intensive wilderness inventory had been completed, the apparent naturalness of approximately 4545 acres within the boundaries of the initial inventory unit had been impacted through road construction, creation of ways and woodcutting activities. Policy direction was somewhat ambiguous at that time with regard to the establishment of WSA boundaries around woodcutting areas, therefore only the 475 acres between the two main roads, and the cherrystem roads themselves, were deleted from the final WSA recommendation. With the benefit of hindsight, it is now clear that the entire 4545 acre area which was no longer "apparently natural" should have been excluded from the WSA.

Little additional acreage has had its naturalness impacted due to woodcutting activity since the area's designation as a WSA, and none of it lies outside the legal boundary description which would have been used at the time of the intensive inventory to delete lands which were no longer "apparently natural".

It is recommended therefore that the remaining 4070 acre parcel, which should have been deleted at the time of the intensive inventory but is still within the WSA, be deleted from further wilderness consideration due to its apparent unnaturalness and the difficulties involved in managing an area with the type of impacts that are present there.

If the area described above is removed, a new peninsula-like area would be created in the extreme south end of the WSA between the Bench and Camp Creek roads. This would be difficult to effectively manage as wilderness and its exclusion from the study area would not jeopardize the wilderness values found in the remainder of the WSA. Admittedly, a proposed boundary line drawn along legal descriptions for almost seven miles will be hard to locate on the ground and could be difficult to administer (see Mid-Range Alternative, Lahontan RMP). Nonetheless, the topography in this portion of the WSA is not such that a more readily identifiable boundary can be located, and the proposed boundary eliminates management problems which could arise with creation of a peninsula-like area once the unnatural acreage to the east is removed from the WSA. Approximately 10,250 acres (inclusive of the 4070 acres described above) would be deleted from the study area if this recommendation is accepted.

F) Stone Canyon

Another small error was made in the intensive wilderness inventory maps published in November, 1980. The boundary should follow the road from NW¼ Sec. 22 east to the point where it joins County Road 376 in NE¼ Sec. 23, T. 21 N., R. 38 E. No acreage correction is required since the affected acreage was deleted from the WSA at the time of the intensive inventory.

The remainder of the WSA boundary, although not perfect, should be able to be identified on the ground. Effective management of the area as wilderness should be possible if these boundaries are utilized.

There are no private inholdings within the study area, although patented land forms a portion of the WSA boundary in seven locations. Continued mining activity will undoubtedly occur on those private lands in Hoyt and Dyer Canyons. Other private lands forming portions of the boundary, including 80 acres around Shoshone Meadows, 160 acres in Cherry Valley, and approximately 200 acres at Horse Creek are used primarily for grazing and agricultural purposes. Access is already provided to these lands and it is unlikely that significant non-conforming developments would take place on them. The study area could be managed effectively as wilderness without their acquisition.

As briefly mentioned above in the Solitude section, the Fallon Naval Air Station (NAS) proposes to install two small solar-powered radar sites inside the WSA. Each site would occupy an area of 250 square feet and have an antenna extending 10 feet in the air. It appears that this activity would comply with the Interim Management Policy & Guidelines for Lands Under Wilderness Review (IMP).

One site would be located in the foothills on the west side of the range, in roughly the NE¼, Sec. 11, T. 20 N., R. 35 E. This would be fairly well hidden and not cause any management problems other than those discussed earlier. The second site would be located approximately 20 feet below the summit of Mount Augusta. Since Mount Augusta is the highest peak in the study area it is reasonable to assume that it would be a destination point for many visitors as well as a focal point for visitors at lower elevations. Placed as proposed, the facility would not be skylined and more than likely could not be seen from the east and the south. However, visitors approaching from Horse Creek, Cherry Valley or other locations on the north and west probably would see the facility. The visual intrusion could be significant, especially considering the attraction which the mountain would hold for wilderness visitors. Furthermore, the prospect of vandalism is a possibility. While there would be little need initially to draw attention to the facility should the area be designated as wilderness, visitor education and/or protective measures might be required at a later date. The IMP states that the Bureau could require removal of the facility if necessary for proper management of the area as wilderness. From a practical standpoint, however, it seems unlikely that this would occur since this site is one of the most important in the proposed NAS system. The Navy would undoubtedly petition the Department and/or Congress for a waiver of the IMP in such an instance.

As discussed in Section II.A., implementation of a Supersonic Operating Area (SOA) in the airspace above the WSA would have significant impacts on solitude opportunities in the study area. From a manageability standpoint, it would be necessary to educate the recreating public about this activity in order that they not entertain unreasonable expectations about solitude opportunities.

Geothermal leases are currently held on approximately 5,800 acres in the extreme northwest corner of the WSA. Exploration thus far has consisted only of geophysical surveys.

Oil and gas leases recently have been issued (1981) on entire townships in and around the study area. Roughly 118,000 acres inside the WSA are now covered by leases (see Map 4). No exploration has yet occurred. Development potential is largely unknown although the rough, mountainous character of most of the land overlaid by these leases may limit this activity. Lands along the alluvial fans around the edges of the WSA have the greatest likelihood of future exploration and development.

Conclusion

Potential manageability problems are significant and involve both visitor and resource management issues. These difficulties include: vehicular access and ORV use; possible concentrated trailhead use; ways and cherrystem roads which extend into the heart of the area; configuration problems due to peninsula-like, non-WSA intrusions; boundary adjustments which rely heavily on legal descriptions; Fallon NAS radar site and supersonic operating area proposals; and potential energy and mineral exploration.

QUALITY STANDARDS

Standard No. 1: Energy and Mineral Resource Values

The Clan Alpine Mountains WSA is located in the central portion of the Clan Alpine Mountains, a typical block faulted range of the Basin and Range province. The oldest rocks exposed in the range are late Triassic sedimentary rocks which crop out in a central horst structure. Jurassic gabbroic rocks and Cretaceous granitic rocks intrude the older sedimentary rocks. Tertiary volcanic flows, tuffs, and welded tuffs of rhyolitic to dacitic composition crop out to the north and south of the central horst. Structurally, the area is the same as the Stillwater Range WSA.

The metallic mineral deposit types within the Clan Alpine WSA are metal-bearing epithermal vein deposits and contact metamorphic skarn deposits (GEM, 1983). The skarn mineralization is associated with Cretaceous intrusive bodies in contact with Late Triassic siltstone. Gold, silver, tungsten and antimony have been produced from the two major mining districts in the WSA. Most of these deposits were developed underground, which, because of higher operating cost, may preclude future development. The possibility of a large disseminated gold deposit does exist, however, based on the geologic setting and the presence of pathfinder minerals such as antimony and mercury.

No active mines of any significance are located within the WSA, however, exploration in the Bernice/Hoyt Canyon areas, Dyer Canyon, Tungsten Mountain, and Florence Canyon areas is active.

The entire WSA is considered to have moderate to high favorability with a low to high confidence level for metallic mineral resources (GEM, 1983).

No known nonmetallic mineral deposits exist within the WSA and favorability for such is considered low (GEM, 1983).

No geothermal deposits of any significance exist within the WSA, however, the region has high prospective value. Known geothermal deposits exist just north and west of the WSA in the McCoy and Dixie Valley areas. Exploration activities on the west and north margins of the WSA have been active in the past. Results of these efforts appear disappointing.

The range front areas have high (5,300 acres) to moderate favorability ratings for the occurrence of geothermal resources with varying levels of confidence. The interior is rated moderate with very low confidence.

Approximately 5,800 acres are under geothermal lease within the WSA, and are located predominately along the northwest margin.

There are no known oil and gas deposits within the WSA nor other indications of such. This area is outside the petroliferous miogeosyncline of eastern Nevada and Utah (GEM. 1983). Interest in oil and gas occurrence within the intermontane basin west of the WSA has been high. Several hundred miles of seismic line have been run in the area and approximately 118,000 acres of land are under lease within the WSA. The leases are located along the margins and in the north half of the interior. No drilling for oil and gas has occurred to date.

Favorability for the occurrence of oil and gas is considered low in the margin areas and very low in the interior (GEM, 1983).

Strategic and critical minerals known to occur within the WSA include antimony, tungsten, fluorspar, lead, mercury, copper and silver.

Conclusions

1. There are no active mines or energy developments within the WSA.
2. Mining exploration is currently active within and adjacent to the WSA. Potential for development within the WSA is good.
3. The majority of the WSA is considered high to moderate favorability for the occurrence of metallic minerals and geothermal resources.
4. There are 451 mining claims, 5,800 acres under geothermal lease, and 118,000 acres under oil and gas lease within the WSA.
5. Strategic and critical minerals known to occur within the WSA include antimony, tungsten, fluorspar, lead, mercury, copper and silver.

Standard No. 2: Impacts on Other Resources

In addition to those impacts discussed in Section II.C., the following impacts relate specifically to the Clan Alpine Mountains WSA. Further detail regarding impacts under each alternative may be found in Chapter Four of the Lahontan RMP.

A. Recreation

As discussed earlier, there would be negative impacts on motorized recreation opportunities (including vehicle-dependent hunting) which would require mitigation measures. Approximately 6.9 percent of the resource area would be closed to ORV use should the entire study area be designated as wilderness by Congress. Backpacking and horse packing opportunities would be enhanced. Recreation use projections may be found in Section IV of this report.

B. Range

Portions of three allotments are located in the WSA and three different operators run cattle in these allotments. All three allotments are grazed during the spring, summer and fall. The quality of grazing is not expected to change significantly in the future.

Cherrystem roads would remain open to permittees. With designation, livestock operators would generally be required to manage their livestock on horseback or foot while leaving their vehicles on border roads or at the terminus of a cherrystemmed road. There would be few impacts on present grazing management practices though since virtually all major range improvements are located alongside or nearby these roads. Additional costs incurred due to wilderness designation should be minimal.

The only known proposed range improvement which may conflict with the Wilderness Management Policy, should this area be designated a wilderness, is a two mile long allotment boundary fence along the ridgetop above Deep Canyon. New rangeland improvements may be constructed only if they are determined to be necessary for the purpose of resource protection (rangeland and/or wilderness) and the effective management of these resources, rather than to accommodate increased numbers of livestock. A new improvement could not be justified solely on the basis that it would aid intensive management resulting in increased grazing.

C. Forestry

Within the WSA there are approximately 10,850 acres of pinyon-juniper, containing about 54,250 cords of wood, which are suitable for harvest. Roughly 5700 acres of this total are found in the area around Bench Creek and Camp Creek, while the remaining acreage is scattered throughout the study area in parcels ranging from 10 to 445 acres in size (see Map 6). Approximately 29 percent of the annual allowable harvest of the RMP area is contained in the Clan Alpine Mountains WSA. This wood could not be harvested if the area were designated as wilderness.

D. Cultural

Unless an extensive cultural resources inventory is undertaken prior to designation, it is likely that smaller sites may be obliterated and isolated artifacts lost through casual collection as a result of increased visitation. This will be offset somewhat by the additional protection afforded the area due to limited vehicular access.

E. Lands

No private lands exist within the WSA. Seven parcels of patented land form portions of the WSA boundary. Impacts upon these lands should be minimal.

F. Energy and Minerals

One hundred ninety-six thousand one hundred and twenty-eight (196,128) acres of public land would be withdrawn from mineral entry. Nine thousand twenty (9,020) acres encumbered by 451 mining claims, 5,800 acres under geothermal lease, and 118,000 acres under oil and gas lease would be affected.

One hundred ninety-one thousand six hundred (191,600) acres of lands designated as having moderate favorability and 3,100 acres of lands designated as having high favorability for the occurrence of metallic minerals would be withdrawn. These lands include the north trending belt of structurally complex Mesozoic sedimentary rocks exposed in the central region of the Clan Alpine Mountains. The Bernice mining district is located at the north end of this feature and the Tungsten Mountain mine area is located at the south end. The intervening area has been rated as moderate to high in favorability for metallic minerals and geothermal resources (GEM, 1983).

Exploration and development in the Bernice/Hoyt Canyon area, Dyer Canyon, Stony Canyon, Florence Canyon, and Tungsten Mountain areas would be constrained.

One hundred ninety thousand eight hundred (190,800) acres of lands designated as having moderate favorability for geothermal resources and 5,304 acres of lands designated as having high favorability for geothermal resources would be withdrawn (GEM, 1983).

Wilderness designation of the Clan Alpine WSA would have significant adverse impacts regarding exploitation of energy and mineral resources. Over 99 percent of the WSA has a moderate or high favorability for metallic minerals and geothermal resources. Exploration for metallic minerals is active and potential for development is good. Numerous mining claims and mineral leases would be affected and the remaining unappropriated lands withdrawn.

G. Wildlife

Adverse impacts to wildlife resulting from wilderness designation would be those listed in Section II.C., of this report.

H. Others

No significant adverse impacts will result to water quality, wild horses, air, or soil quality.

Conclusion

Conflict exists in the Clan Alpine Mountains WSA between wilderness designation and management for other resources in the unit. Mineral development, forestry, and motorized recreational opportunities would experience the most profound impacts. Range would be impacted to a lesser extent since construction of an allotment boundary fence may be precluded.

Standard No. 3: Impacts of Non-Designation on Wilderness Values

In addition to the general points made in Sec. II.C., the following are likely to impact the wilderness values of the area if it is not designated as wilderness.

Geothermal exploration may occur in the extreme northwest portion of the area. Oil and gas exploration seems less likely to occur considering much of the terrain which these leases cover. However, if such exploration did take place, naturalness, solitude and primitive recreation opportunities would be degraded and possibly lost in the areas experiencing these impacts.

Mineral exploration and development will continue, especially around areas of existing activity. Degradation or loss of wilderness values will depend upon the magnitude of these activities, however, it may be assumed that wilderness characteristics will be adversely affected wherever they occur.

Woodland products harvest could adversely affect the mandatory wilderness characteristics on up to 10,850 acres in the study area.

Some additional rangeland improvements, primarily spring developments and fencelines, may be installed. The proposed allotment boundary fence above Deep Canyon would not significantly impact wilderness values although it could restrict free movement of visitors seeking a wilderness experience.

No restrictions would be placed on aircraft overflights and helicopter servicing of two proposed naval radar sites. Solitude opportunities could be severely impacted in the long term if the number or intensity of sonic booms caused by planes from the Fallon NAS increases substantially.

Conclusion

Long-term impacts of non-designation, primarily resulting from energy and mineral exploration and development, woodland products harvest and air training exercises, could substantially impact the wilderness values of the study area.

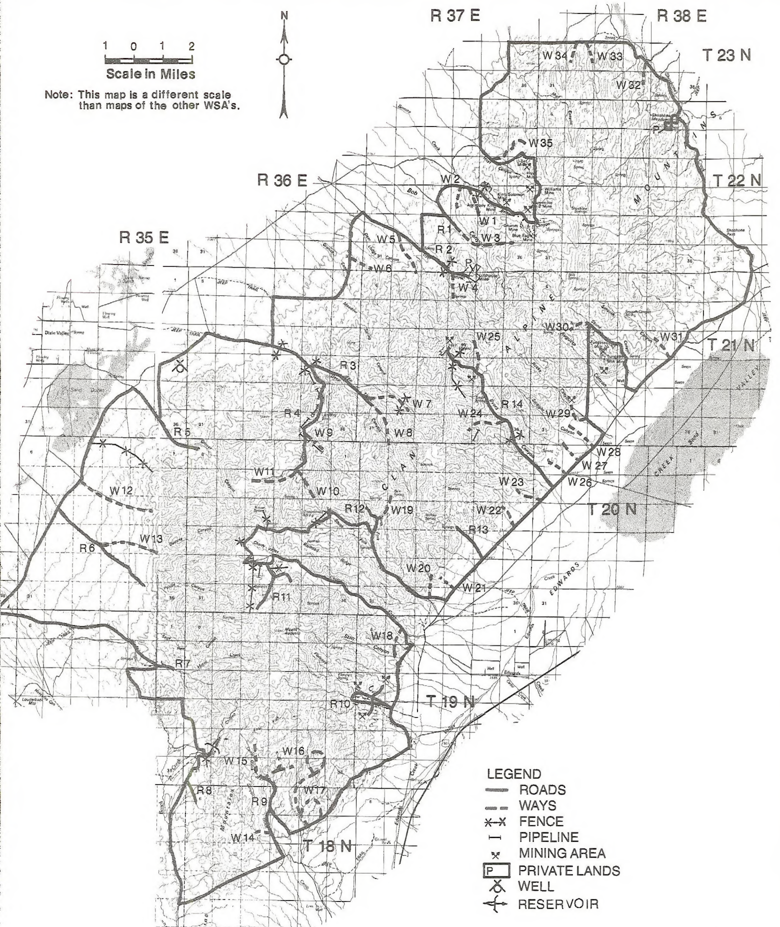
Standard No. 4: Public Comment

Standard No. 5: Local Social and Economic Effects

Standard No. 6: Consistency with Other Plans

These standards are addressed in the Resource Management Plan itself and in Sections II.C. and Appendices B and C of this report.

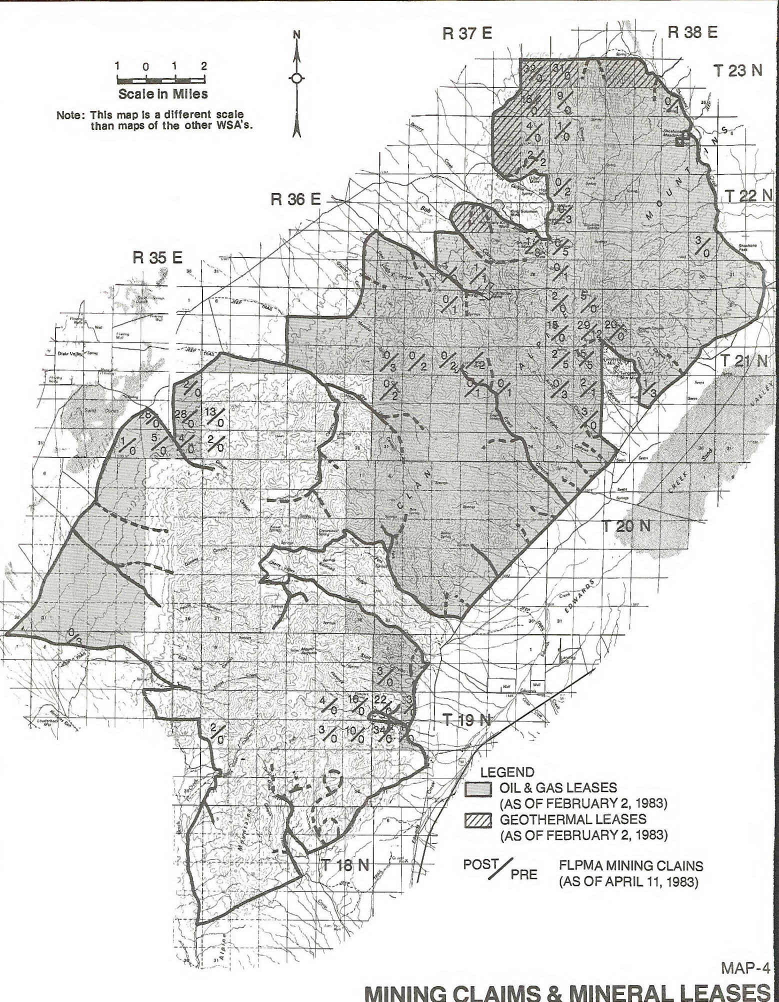
Clan Alpine Mtn. WSA Maps



MAP-3

EXISTING SITUATION

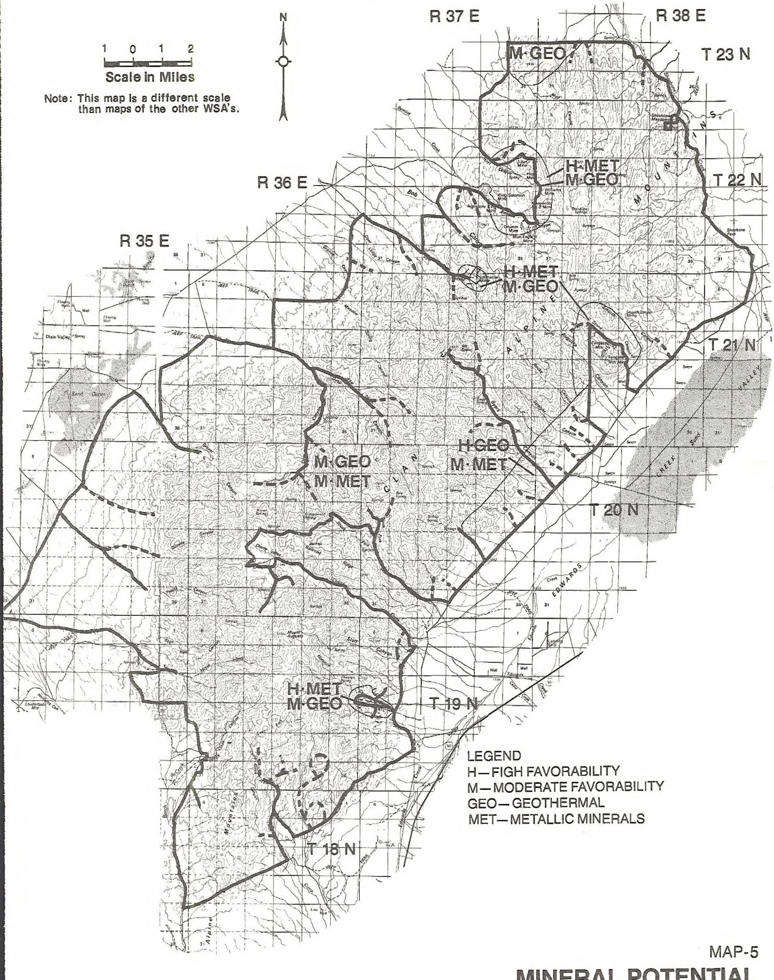
CLAN ALPINE MTNS. NV-030-102



MAP-4

MINING CLAIMS & MINERAL LEASES

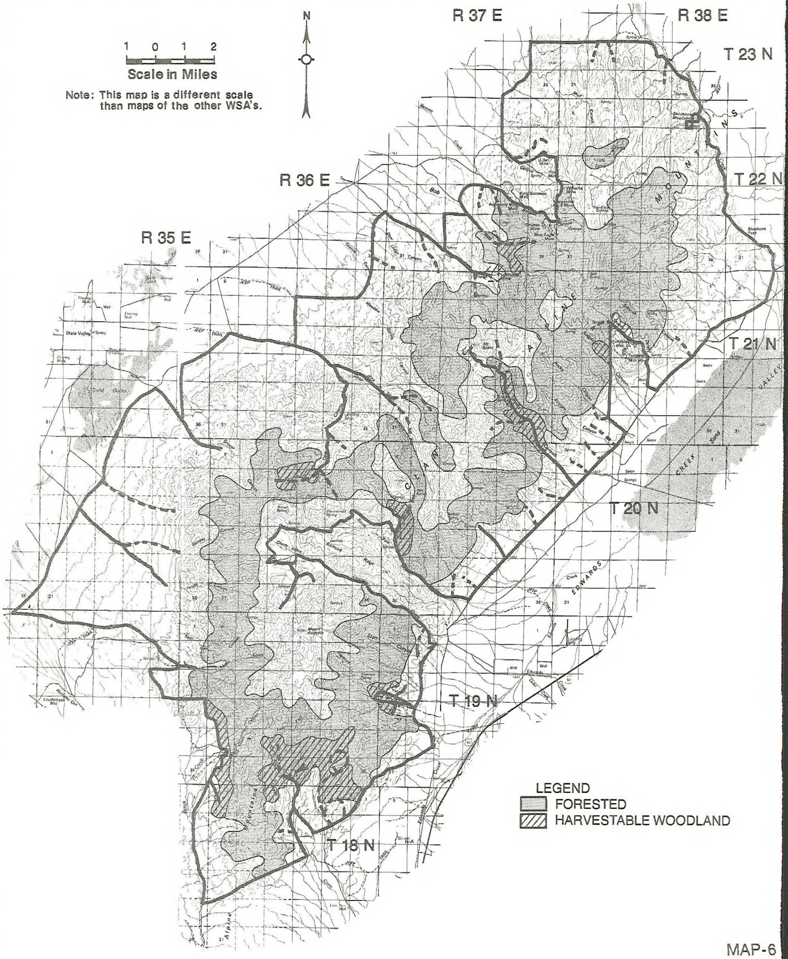
CLAN ALPINE MTNS. NV-030-102



MAP-5

MINERAL POTENTIAL

CLAN ALPINE MTNS. NV-030-102

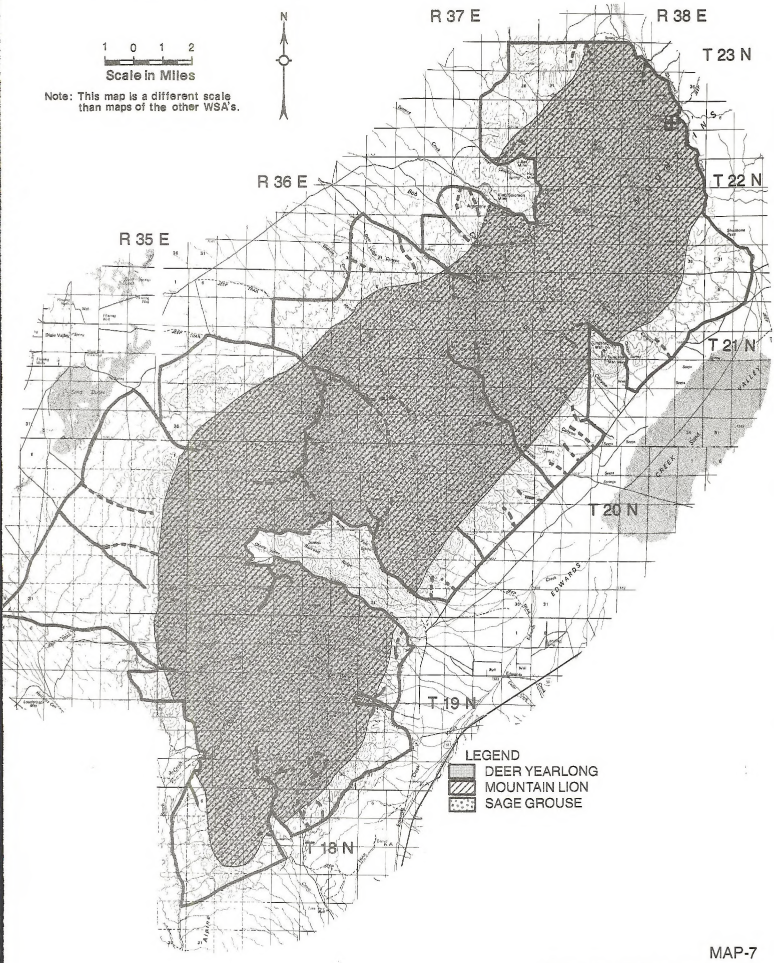


Note: This map is a different scale than maps of the other WSA's.

MAP-6

WOODLAND

CLAN ALPINE MTNS. NV-030-102



MAP-7

WILDLIFE HABITAT

CLAN ALPINE MTNS. NV-030-102

The Stillwater Range WSA lies in the north central portion of Churchill County, Nevada, approximately 40 road miles northeast of Fallon, Nevada. This WSA contains 94,607 acres of public land and is located within the Clan Alpine Planning Unit of the Lahontan Resource Area. There are 619.78 acres of private inholdings within the WSA.

The WSA boundary is formed primarily by county roads and other roads documented during the intensive inventory process. A short stretch of the boundary follows patented land property lines around Dixie Hot Springs and a legal description which eliminates an area of mining activity in Fondaway Canyon. Access to the west side of the WSA is provided by the Stillwater Road (county road 399). The east side of the area is reached via the Dixie Valley Road (county road 380) which originates at U.S. 50, approximately 28 miles south of the WSA. Roughly 2½ hours are required to drive to the WSA from Reno, Nevada, the nearest metropolitan area.

The topography of the area is generally mountainous in the central portion of the WSA with alluvial fans extending out to the boundaries on both the east and west sides. Uses of the area include mining, grazing and recreation.

Criterion No. 1: Evaluation of Wilderness Values

Component No. 1: Quality of the Area's Mandatory Wilderness Characteristics

A. Naturalness

The alluvial fans and lower foothills on both sides of the WSA, particularly the west side, are the most heavily impacted by physical intrusions. Eight cherrystem roads and four ways are found on the west side of the WSA, most of them providing access to mining activity. Seven cherrystem roads and three ways are located on the east side. Again, most of these provide access to mining activity. The entire WSA has a total of 27.5 miles of roads in fifteen separate segments and 21.5 miles of ways in eleven separate segments. The cherrystemmed roads and their lengths are as follows:

Alameda (R-10)	1.7 miles
Big Elk (R-3)	2.9
Coppereid (R-2)	1.4
Eagle Mountain (R-15)	3.8
Grimes Canyon (R-1)	1.1
Hare Canyon (R-12)	1.5
Mill Canyon (R-6)	1.7
Mississippi Canyon (R-14)	2.0
North Cox Canyon (R-8)	1.3
North Mill Canyon (R-5)	.7
Shanghai Canyon (R-4)	2.0
Silver Hill Canyon (R-9)	1.3
Springs (R-13)	1.5
Unnamed (R-7)	1.1
Wood Canyon (R-11)	3.5
TOTAL	27.5 miles

The extreme northwest corner of the WSA has over seven miles of ways (W-1) in less than four square miles. All of these ways are associated with mining activity.

About three miles of fenceline are found in the WSA. Almost all of it is located on the alluvial fans, and is spread among six separate areas.

The northeast part of the study area has been impacted by mining activity north of Eagle Mountain. Several old adits, small areas of surface disturbance and approximately three miles of ways (W-7) are found in this portion of the WSA. Many of these impacts are highly visible.

There are no pipelines, spring developments or other range improvements inside the WSA other than one well and the fencelines mentioned above.

Grandfathered mining activities have expanded their areas of operation since the intensive inventory was completed. In general, these expansions have been small (Mill and Alameda Canyons), although production has increased substantially in Fondaway Canyon. Approximately 120 acres have been physically impacted in Fondaway Canyon, while less than five acres in each of the other areas have been disturbed. New surface disturbance associated with grandfathered rights is currently taking place near older workings in Wood and Silver Hill Canyons. Less than five acres have been disturbed in each location. The quality of wilderness characteristics has been diminished primarily in the relatively small areas immediately surrounding these disturbances. Visual impacts in Silver Hill Canyon and Fondaway Canyon are more severe, however, since mining activities now extend deeper into the respective canyons. Approximately 120 acres in Silver Hill Canyon and about 800 acres in Fondaway Canyon are visually impacted. Likewise, mining activity along the foothills at the mouth of Wood Canyon may be seen throughout much of the alluvial fan in the southeast corner of the WSA, an area of roughly 4500 acres.

In July, 1981, an 1800' temporary road was authorized to be constructed in Shanghai Canyon under the provisions of the IMP. This road has not yet been constructed. If and when it is constructed, it will have to be rehabilitated by July, 1985, roughly the date the Secretary is expected to send his recommendation for the area to the President.

Recent unauthorized mining activity and road building has occurred in the southwest corner of the area near W-4 between Cox and Silver Hill Canyons. This is currently under investigation and will be brought into compliance with the IMP.

The central mountainous portion of the WSA remains in an essentially natural condition. Man-made impacts are virtually non-existent in this area.

Outside sights and sounds that impact the area include county road 380 (Dixie Valley Road), county road 399 (Stillwater Road) and the various areas of mining activity which have been "cherrystemmed" out of the WSA. Dust clouds from car and truck traffic on the outer boundary roads and cherrystem roads crossing the alluvial fans can be seen from the higher elevations in the WSA, although the noise associated with this traffic generally cannot be heard. Cherrystem roads which penetrate the mountainous portion of the WSA are generally located in canyon bottoms, and the impacts of traffic on these roads tend to be confined to the immediate area of the respective canyons. The major exception to this is the road which climbs the mountain between Shady Run and Big Elk Canyons (R-3). From the western boundary road the unnaturalness of this area is readily apparent. Likewise, although areas of mining activity have been removed from the WSA, the sights and sounds of these operations are discernible in those areas inside the WSA which immediately surround them. The visual impacts to these areas were discussed above.

Geothermal exploration in Dixie Valley has, in the past, created impacts outside the WSA which can be seen and heard inside the area, primarily along the ridgelines. Such exploration is currently suspended, however, it quite likely will resume when economic conditions improve.

Conclusion

The imprints of man's work are most apparent in the northern quarter of the WSA and along the alluvial fans, particularly on the west side of the area.

Few imprints exist in the central mountainous portion of the WSA and this part of the area remains in an essentially natural condition. The sights and sounds of some outside activities may be experienced in this part of the area, however, their impact is minimal.

B. Outstanding Opportunities for Solitude and Primitive and Unconfined Recreation

1. Solitude

The size (94,607 acres) and configuration of the WSA are generally conducive to outstanding opportunities for solitude, although the number and location of cherrystem roads does somewhat impact the configuration on the west side of the unit. The Stillwater Range WSA is about sixteen miles long and ranges from nine to eleven miles in width.

Topographic and vegetative screening range from poor to excellent. The gently rising, shadscale and sagebrush covered fans between the east and west boundary roads and the beginning of the mountainous terrain provide virtually no topographic screening and only minimal vegetative screening. In the lower reaches of the mountainous terrain the topography consists of moderately dissected canyons where sagebrush predominates, although greasewood can be found (mainly on the west side of the area) as well as other low shrubs. Topographic screening is moderate and vegetative screening is poor. In the northern part of the WSA, and at the higher elevations in the southern part of the area, the topography becomes much more highly dissected. While the area roughly south of Fondaway Canyon consists of one main north-south trending ridgeline, the area north of this canyon spreads out into a more highly dissected configuration and a single ridgeline is no longer distinguishable. In these higher elevations pinyon-juniper associations predominate, frequently in relatively dense stands. Low sagebrush is found in most open areas. Pockets of riparian vegetation are located in several canyons where springs are found. There are no perennial streams in the study area. Topographic and vegetative screening are good to excellent in these areas.

Opportunities for a visitor to find a secluded spot are closely related to topographic and vegetative screening. Opportunities are best in the canyons and dense vegetation of the central mountainous portion of the WSA and almost nonexistent on the alluvial fans on both the east and west sides. In the remainder of the WSA the topography affords some opportunities for a visitor to find a secluded spot, however, the lack of vegetative screening means that visitors would have to place more distance between themselves and other users in order to experience a feeling of seclusion.

The impacts of aircraft overflights on the WSA are discussed in Section II.A., of this report. It should be noted, however, that the presence of the B-20 (Lone Rock) bombing range adjacent to and immediately west of the WSA, does have an additional detrimental impact on the solitude opportunities in the area, particularly on the west side of the WSA. Periodic servicing, by helicopter, of a small solar-powered radar site which the Navy proposes to install just east of Eagle Mountain would cause a substantial impact, at the time of servicing, on the solitude experienced by a visitior to the immediate area. Such servicing would take approximately 30-45 minutes once a month (see Criterion No. 2: Manageability).

The sights and sounds of mining activity outside the WSA, particularly around Fondaway and Alameda Canyons and the old Dixie townsite, impinge upon the solitude of the areas immediately surrounding them. Geothermal exploration in Dixie Valley has temporarily ceased, primarily due to economic conditions. If and when it resumes, the sight of drilling equipment and the attendant noise associated with this activity could adversely affect solitude opportunities on the east side of the WSA.

2. Primitive and Unconfined Recreation

Access to the WSA is generally good from both the east and west, however, there are few points of interest to attract a visitor. The colorful geologic formations and rugged terrain around Mississippi Canyon are probably the most interesting feature of the WSA. Although the majority of the area is essentially natural in character, there is little that distinguishes it from numerous other Great Basin mountain ranges or which makes it particularly unique. There are no major peaks and even the highest country in the WSA is somewhat rolling and lacks a timber line.

Elements of challenge are associated with the typical Great Basin climate (*i.e.* hot, dry summers, cold winters), the relatively rugged terrain and the limited amount of water found in the area.

Approximately 7000 acres, centered around upper Hare Canyon, were identified under the Recreation Opportunity Spectrum (ROS) as having primitive characteristics. The primary criterion at the time of this designation was that the area must be at least three miles from the nearest road. No qualitative assessment of primitive characteristics was made.

Although the intensive inventory report stated that backpacking and camping opportunities are "outstanding" in the study area, such opportunities are generally limited to the central portion of the WSA and there are few points of interest and no features which require an extended visit in order to see. Water is scarce and a visitor would find it difficult to avoid the impacts of human activity should he stray from the central core of the area. The same limitations apply to horseback riding opportunities, as well as the fact much of the most rugged terrain in the central portion of the WSA is inaccessible for this activity. Sightseeing opportunities are generally good. Vistas seen from the ridgelines are impressive and colorful rock formations and dissected terrain found in the upper elevations and the northern third of the study area are relatively scenic. The 1954 earthquake fault scarp and various historic mining ruins, such as those at Coppereid and in Cox Canyon, would be of interest to visitors.

Conclusion

Opportunities for solitude vary a good deal, but tend to be best in the central, mountainous portion of the WSA. Recreational opportunities are not especially diverse and their quality is limited by the physical character of the WSA itself.

Component No. 2: Special Features: Quality of the Area's Optional Wilderness Characteristics

No threatened or endangered species are known to occur within the WSA, although Phacelia glaberrima (smooth phacelia), listed as a species of special concern, is found in the southeast portion of the study area (see Lahontan RMP, Table 3-5). The presence of mountain lions and numerous raptors, including golden eagles, is an important ecological value. It is estimated that 10-15 wild horses live in the study area.

Geologically, the Stillwater Range contains several units of deformed Mesozoic rocks separated by thrust faults, and is the center of a large complex of mafic igneous rocks, and a succession of volcanic and intrusive rocks of probable Cenozoic age. Quaternary faults are abundant and movements on some of them have caused earthquakes.

The fault scarp on the east side of the WSA along the base of the mountains is a result of the 1954 earthquake. It is easily seen and in places the earth has been displaced six to seven feet.

The old mining towns of Shady Run, Dixie and Coppereid are all located just outside the WSA boundary. With the exception of the stone ruins of three buildings at the site of Coppereid, virtually all traces of these towns have been obliterated. Some old wooden buildings are still partially standing in upper White Cloud Canyon and large stacked piles of cut cord wood intended for these old mining operations can still be found in some of the side canyons north of White Cloud Canyon. These would be of interest to visitors to the area.

The area experienced prehistoric aboriginal occupation and was extensively surveyed in 1979 by a doctoral candidate from the University of Michigan. Some surface collection was done, however, no major cultural sites such as the Topia Creek cave and pictograph site in the Desatoya Mountains WSA were located. Approximately 25 minor aboriginal and four historic sites were identified.

Conclusion

There are few special features in the study area and they are primarily of local significance.

Component No. 3: Multiple Resource Benefits: The Benefits to Other Multiple Resource Values and Uses Which Wilderness Designation of the Area Could Ensure

Benefits to other resources that would result from designation of the Stillwater Range WSA as statutory wilderness are the ones listed in Section II. A., as being common to all study areas. These benefits result from the maintenance of present, undisturbed conditions, and would accrue to wildlife, wild horses, watershed, air quality, scenic quality, cultural resources and recreation.

Component No. 4: Diversity in the National Wilderness Preservation System

This component is discussed at length in Section II.A., of this report.

Criterion No. 2: Manageability

The basic thrust of management for the Stillwater Range study area, should it be designated as wilderness, would be to provide opportunities for primitive recreation and solitude. Emphasis would be placed on opportunities for primitive recreation in the central core of the area, where use would be concentrated. Recreational use in this WSA would not create any significant management problems itself, although visitors could find themselves gaining access to the unit through areas where resource uses are taking place which are generally incompatible with wilderness management objectives. Use would probably be low due to the relative remoteness of the area, the lack of destination points and other major points of interest, and the absence of stereotypical wilderness features.

The western side of the WSA has eight cherrystem roads and four ways crossing the alluvial fan and, in several instances, providing access into the mountainous portion of the area. The northwest corner of the unit has over seven miles of ways in less than four square miles. Almost all of these roads and ways provide access to either current or former mining activity. It would be difficult to control off-road vehicle use and the extent of mining operations along the west side of the WSA indicates that such activity is likely to continue and possibly increase. More than 300 mining claims blanket much of the west side, and oil and gas leases have recently been issued for virtually all of the alluvial fan north of Mill Canyon. Managing this portion of the WSA as wilderness would be extremely difficult.

Seven roads and three ways are found on the east side of the WSA, however, they are widely scattered and do not provide significant manageability problems per se. These roads and ways provide access to range improvements and areas of mining activity. They also have been used by geothermal exploration companies as access to several of their leases. Geothermal and oil and gas leases also blanket most of the alluvial fan on this side of the WSA.

Road (R-15), ways (W-7, W-8) and evidence of former mining activity in the northeast portion of the WSA between Eagle Mountain and White Rock Canyon, combined with existing mining activity just outside the WSA boundary, presents a difficult manageability problem. The cherrystem road around Eagle Mountain comes within a mile of the old Dixie townsite and and the operating Dixie Comstock mine, effectively isolating this area from the rest of the WSA. Along with the two ways north of this road, which are substantially noticeable throughout much of this part of the WSA, and the relatively narrow configuration here, it would be difficult to effectively manage this portion of the unit as wilderness.

Two private inholdings are located in the WSA. In Sec. 21, T. 23 N., R. 35 E., there is located 67.67 acres of private land patented in 1915. There is currently no means of access to this inholding. In Sections 19, 20, 29 and 30, T. 23 N., R. 34 E., there are 552.11 acres of private land. This consists of 20 separate parcels ranging from 2.5 to 122.4 acres in size, patented between 1894 and 1912. Access was previously provided by a road which started in Grimes Canyon, climbed the hill to the south and dropped into White Cloud Canyon. Much of this route remains as a way (W-2), although that portion between the top of the hill and the bottom of White Cloud Canyon is now totally obliterated. Reasonable access to these lands is guaranteed to the private owners and this access may include roads. The Bureau has little control over development of the private land. Those patents around White Cloud Canyon have been surrounded by new mining claims and at least one company has shown interest in leasing these private lands and gaining access to them. Access to and development of these inholdings could severely impact naturalness and the opportunities for solitude available in these areas. Land exchange or land purchase is a possible means of resolving this problem. It would be difficult to effectively manage the areas surrounding these inholdings if these lands are never acquired.

The Navy plans to install a small, solar-powered radar site southeast of Eagle Mountain in Sec. 21, T. 23 N., R. 35 E. This site would occupy an area of 250 square feet and have an antenna extending 10 feet into the air. It appears that this activity would comply with the IMP. It is anticipated that this facility would have to be serviced monthly by helicopter. Such servicing would cause no direct management problem and could probably be accommodated under the Wilderness Management Policy and any wilderness management plan eventually written for the area. However, if visitation to the area increases, as it likely would if the area is designated as wilderness, indirect management problems such as vandalism could arise. Also, users of the wilderness would need to be alerted to the fact that servicing of the facility could occur during their visit, possibly causing an adverse impact on their recreational experience.

As discussed in Section II.A., the implementation of a Supersonic Operating Area (SOA) in the airspace above the WSA would have significant impacts on solitude opportunities in the area. From a manageability standpoint, it would be necessary to educate the recreating public about this activity in order that they not entertain unreasonable expectations about solitude oportunities.

Geothermal leases are currently held on approximately 11,000 acres along the alluvial fan on the east side of the WSA. Several shallow geothermal temperature gradient holes have been drilled in this area in compliance with the IMP, and it is anticipated that such exploration will continue (Map 9).

About 6,400 acres on the flats of the southeast side of the area and 11,600 acres on the fans and low hills of the west side were leased for oil and gas exploration in 1981. No exploration has yet occurred and the potential for development is unknown (Map 9).

Several roads and ways cross the fans in both the far southeast and southwest corners of the WSA. It would be difficult to close these routes or to stop off-road vehicle use in these areas.

More IMP-related issues have arisen in this study area than in any other WSA. This trend is expected to continue.

Conclusion

Several significant problems exist for managing portions of the Stillwater Range as wilderness in the long term.

The number and location of roads and ways on the west side of the WSA, combined with ongoing mining activity in this area, creates a difficult manageability situation along the alluvial fan and in the lower reaches of the mountain range itself. The cherrystem road, three miles of ways and general configuration of the northeast corner of the WSA would make effective management of this area difficult also. Two private inholdings pose substantial manageability problems in the northern part of the area. A proposed Naval radar site and implementation of a Supersonic Operating Area may present management difficulties in the future. Geothermal exploration could take place along the east side of the WSA. Offroad vehicle use would be difficult to control along any of the alluvial fans, but particularly in the far southeast and southwest portions of the area.

The central, mountainous part of the WSA has few manageability problems in itself. However, if areas of management conflict are removed from the study area, this remaining portion of the unit could be difficult to administer due to the proximity of conflicting resource uses and a boundary segment over eight miles in length which follows a contour line.

QUALITY STANDARDS

Standard No. 1: Energy and Mineral Resource Values

The Stillwater Range WSA is located within the central portion of the Stillwater Range, a typical block faulted range of the Basin and Range province. Complexly folded and faulted clastic sedimentary and volcanic rocks of Late Triassic to Jurassic age are exposed in the northeast and southwest portions of the range. These rocks have been intruded by granitic and gabbroic rocks. The older rocks are overlain by Tertiary volcanic flows, tuffs, and welded tuffs of rhyolitic composition. Northeast trending normal faults of Quaternary age are ubiquitous and complicate the geology greatly.

Much of the metallic mineralization is associated with the older sedimentary rocks which acted as host for epithermal vein deposits, explosion breccias, and contact metamorphic deposits. These rocks are well exposed within this portion of the range and offer a unique opportunity for exploration and development. The abundance of Mesozoic and Tertiary intrusives in this area of favorable host rocks suggests the potential occurrence of large disseminated gold deposits. These types of deposits are likely exploration targets as opposed to smaller epithermal vein deposits.

Nonmetallic minerals within the WSA include fluorspar, limestone, and sand and gravel. The widespread occurrence of limestone and sand and gravel within the region together with the poor proximity to a known market reduce their worth to a nominal value. No material sale sites occur within the WSA. Minor production of fluorspar (1,900 tons) has occurred in the Cox Canyon area. Fluorspar occurrences in the White Cloud and Shady Run districts have some potential. Overall, favorability for the occurrence of economic nonmetallic mineral deposits is considered low (GEM, 1983).

Geothermal deposits are located along the eastern boundary of the WSA and are coincident with the range front fault. These deposits are water dominated, hydrothermal convective systems where circulation along deep-seated normal faults brings high temperature (400° F.) fluids to depths exploitable by conventional drilling (0-10,000 ft.). A discovery of geothermal resources has been made northeast of the WSA in the Lamb Ranch area of Dixie Valley. South of this discovery, the area just outside of the eastern boundary of the WSA has been explored by Thermal Power Company, the results being inconclusive. In general, the development of geothermal resources would be restricted to the alluvial fans at the margins of the WSA and would not likely occur within the rugged terrain of the interior. The interface of the mountain range and alluvial fan coincides with the range front fault and associated geothermal reservoirs. The superposition of these features creates an ideal environment for the development of geothermal resources.

The range front areas of the WSA (26,900 acres) have been rated as highly favorable for the occurrence of geothermal resources. The interior areas (67,700 acres) are rated as moderate (Map 10). Approximately 11,000 acres of lands have been leased for geothermal resources, predominately on the eastern boundary.

Oil and gas resources are not known to occur within the WSA, an area considered outside the petroliferous miogeosynclinal province (GEM, 1983). The east and west margins of the WSA, part of the Dixie Valley and Carson Sink alluvial basins, have been leased (11,000 acres) for oil and gas as well as some of the mountainous terrain south of Fondaway Canyon (Map 10). The margin areas (16,500 acres) have been rated as having moderate favorability for the occurrence of oil and gas with a low level of confidence. The majority of the WSA is rated low favorability with a high degree of confidence (GEM, 1983). Some exploration drilling and seismic work has been conducted in Dixie Valley and the Carson Sink with no obvious success.

Conclusions

1. There are no active mining claims or energy developments located within the WSA.

2. Major mining and geothermal exploration is taking place in and adjacent to the WSA. Potential for development is good.

3. Active mines and geothermal developments exist adjacent to the WSA. Expansion into the WSA is likely.

4. The majority of the WSA is rated high to moderate favorability for the occurrence of geothermal and metallic minerals and low favorability for nonmetallic minerals, oil and gas, and other energy minerals.

5. There are 594 mining claims, 11,000 acres under geothermal lease, and 18,000 acres under oil and gas lease within the WSA.

6. Strategic and critical minerals known to occur within the WSA include tungsten, copper, lead and fluorspar.

Standard No. 2: Impacts on Other Resources

In addition to those impacts discussed in Section II.C., the following impacts relate specifically to the Stillwater Range WSA. Further details regarding impacts under each alternative may be found in Chapter Four of the Lahontan RMP.

A. Recreation

Adverse impacts to the recreation resource resulting from wilderness designation will be the general ones listed in Section II.C. Approximately 3.3 percent of the resource area would be closed to ORV use should the entire study area be designated as wilderness by Congress. Recreation use projections may be found in Section IV of this report.

B. Range

The Hare Canyon and Mississippi Canyon allotments lie totally within the WSA and portions of four other allotments extend into the study area. Four different operators run cattle in these allotments. The White Cloud and Boyer Ranch allotments are used primarily in the summer and fall while the Copper Kettle allotment in the extreme northwest of the WSA is utilized in all seasons except winter. The Dixie Valley, Hare Canyon and Mississippi Canyon allotments are all used by the same operator. Cattle also graze in these allotments every season except winter.

The grazing quality for this WSA varies primarily because of the terrain, however, it may be characterized generally as being fair to good. There are few existing range improvements and future grazing quality is expected to remain the same as it is at present. Consideration is presently being given to developing some springs. This would be accomplished by helicopter rather than through road construction, primarily due to the rugged terrain in which these springs are located. If the area were designated as wilderness these may be constructed only if they are determined to be necessary for the purpose of resource protection (rangeland and/or wilderness) and the effective management of these resources, rather than to accommodate increased numbers of livestock. Use of helicopters to construct these improvements may be precluded and material may have to be transported to the site by horseback.

Cherrystem roads would remain open to permittees and there would be few impacts on present grazing management practices.

C. Forestry

Designation of the Stillwater Range WSA as wilderness will not affect the annual allowable cut in the forestry program since that cut is based on productive woodlands and all woodlands found in the study area have been classed as non-productive in nature.

D. Cultural

Unless an extensive cultural resources inventory is undertaken prior to designation, it is likely that smaller sites may be obliterated and isolated artifacts lost through casual collection as a result of increased visitation. This will be offset somewhat by the additional protection afforded the area due to limited vehicular access.

E. Lands

There are two parcels of private land along the WSA boundary. Within the WSA itself there are 21 parcels of private land, with 20 of these adjacent to each other. The general location of these lands is as follows:

T. 23 N., R. 35 E., Sec. 21 (one parcel)	67.67 acres
T. 23 N., R. 34 E., Sec. 19, 20, 29, 30 (twenty parcels)	552.11 acres
	619.78 acres

Although reasonable access to these lands is guaranteed, a private land owner wishing to develop his land may experience some delay in his plans while the Bureau assesses the various means of access and works with him to determine the most appropriate route or method of entry to the property.

F. Energy and Minerals

Ninety-four thousand six hundred seven (94,607) acres of public land would be withdrawn from mineral entry. Eleven thousand eight hundred forty (11,840) acres, encumbered by 592 mining claims, 11,000 acres under geothermal lease and 18,000 acres under oil and gas lease would be affected.

Eighty-seven thousand (87,000) acres of lands rated as having moderate favorability and 2,100 acres of lands rated as having high favorability for the occurrence of metallic minerals would be withdrawn (GEM, 1983). This alternative would constrain exploration and proposed mining in Fondaway Canyon, Cox Canyon, White Cloud Canyon, Mississippi/Hare Canyons, and the Dixie Comstock area (Akright, 1983; Metzger, 1983; Vickre, 1983).

Sixty-seven thousand seven hundred (67,700) acres of lands rated as having moderate favorability and 29,900 acres rated as having high favorability for the occurrence of geothermal resource would be withdrawn (GEM, 1983). This alternative would constrain exploration and development activities for Thermal Power Company's geothermal prospect in the Dixie Comstock area.

Sixteen thousand five hundred (16,500) acres of lands rated as having moderate favorability for the occurrence of oil and gas would be withdrawn (GEM, 1983).

Wilderness designation of the Stillwater WSA would have significant adverse impacts regarding the exploitation of energy and mineral resources. Over 94 percent of the WSA has a moderate or high favorability for metallic minerals and geothermal resources. Geothermal and precious metal developments are located adjacent to the WSA and exploration for these resources also is active within the WSA. Numerous mining claims and mineral leases would be affected and the remaining unappropriated lands withdrawn. The Stillwater WSA is considered one of the more favorable of environments for the occurrence of metallic minerals within Region 3 of the Basin and Range province (GEM, 1983).

G. Wildlife

Adverse impacts to wildlife resulting from wilderness designation would be those listed in Section II.C., of this report.

H. Others

No significant adverse impacts will result to water quality, wild horses, air or soil quality.

Conclusion

Major conflicts exist in the Stillwater Range WSA between wilderness management and management for other resources, particularly the energy and mineral resources. Conflicts also exist with respect to access to private lands and possible development of water sources.

Standard No. 3: Impacts of Nondesignation on Wilderness Values

In addition to the general points made in Section II.C., the following are likely to impact the wilderness values of the area if it is not designated as wilderness.

Geothermal exploration, and possibly oil and gas exploration, could occur on the alluvial fans on both the east and west sides of the study area, particularly the east side. Naturalness and solitude would be degraded and possibly lost in areas experiencing these impacts.

Continued mineral exploration and development will occur throughout much of the WSA, especially in the lower reaches of the range on the west side. New claims will be located also. Degradation or loss of wilderness values will depend upon the magnitude of these activities, however, it may be assumed that wilderness characteristics will be adversely affected wherever they occur.

Private lands, particularly those in upper White Cloud Canyon, may be developed. Access to these lands would have to be provided which could degrade or destroy wilderness values along the access route. In addition, solitude opportunities would be adversely affected on public lands surrounding private lands on which development was taking place.

No restrictions would be placed on aircraft overflights and helicopter servicing of naval radar sites. Solitude opportunities could be severely impacted in the long term if the number or intensity of sonic booms caused by planes from the Fallon NAS increases substantially.

Conclusion

If not designated as wilderness, naturalness, solitude and primitive recreation opportunities will be degraded and possibly lost in those areas experiencing energy or mineral exploration and development. This activity would also reduce the size of the area containing wilderness characteristics. Air combat training exercises could have a substantial adverse impact on solitude opportunities in the area. The north central portion of the WSA around Mississippi Canyon and Eagle Springs should remain undisturbed for the forseeable future.

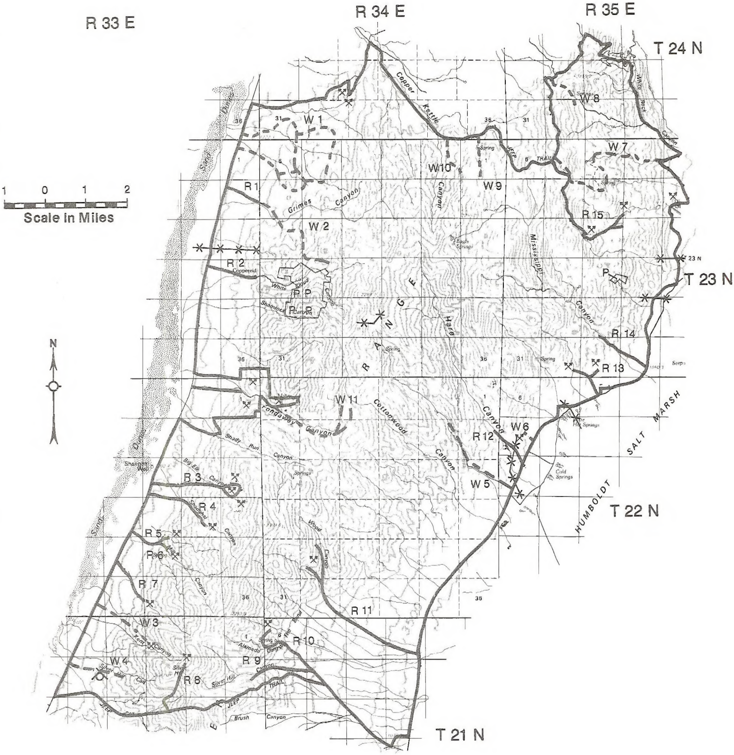
Standard No. 4: Public Comment

Standard No. 5: Local Social and Economic Effects

Standard No. 6: Consistency with Other Plans

These standards are addressed in the Resource Management Plan itself and in Sections II.C., and Appendices B and C of this report.

Stillwater Range WSA Maps

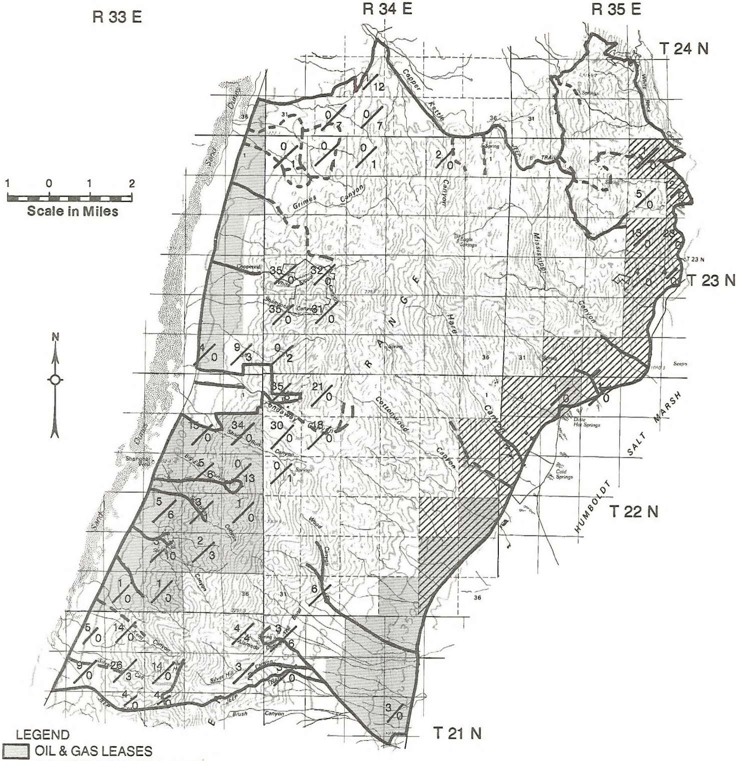


LEGEND
ROADS
WAYS
FENCE
MINING AREA
PRIVATE LANDS
WELL

MAP-8

EXISTING SITUATION

STILLWATER RANGE NV-030-104



LEGEND

░ OIL & GAS LEASES
(AS OF FEBRUARY 2, 1983)

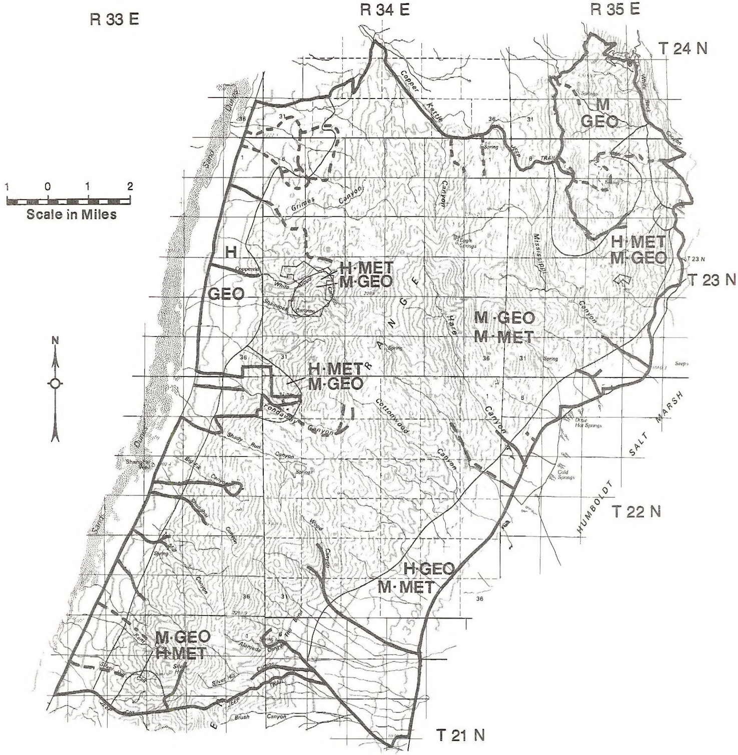
▨ GEOTHERMAL LEASES
(AS OF FEBRUARY 2, 1983)

POST/PRE FLPMA MINING CLAIMS
(AS OF APRIL 11, 1983)

MAP-9

MINING CLAIMS & MINERAL LEASES

STILLWATER RANGE NV-030-104

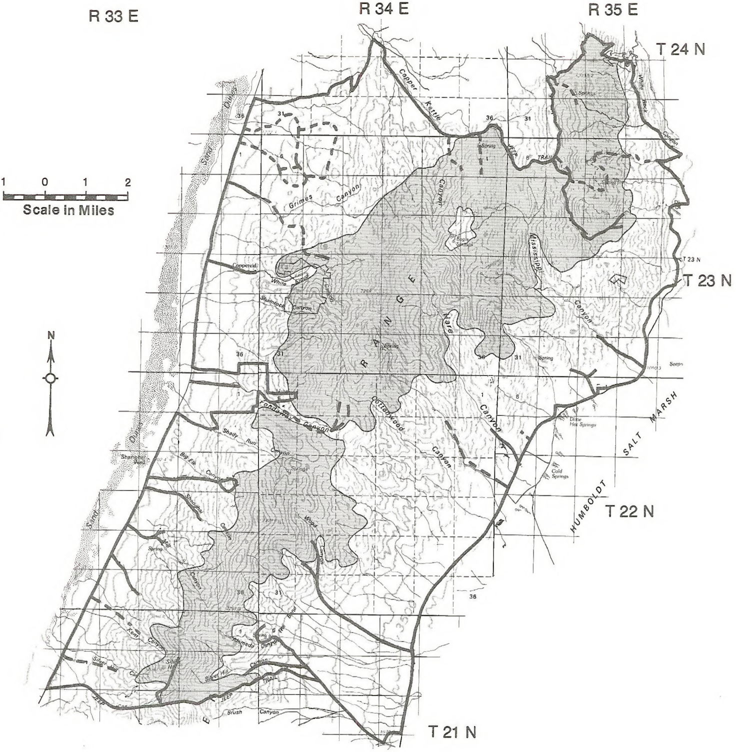


H—HIGH FAVORABILITY
M—MODERATE FAVORABILITY
GEO—GEOTHERMAL
MET—METALLIC MINERALS

MAP-10

MINERAL POTENTIAL

STILLWATER RANGE NV-030-104



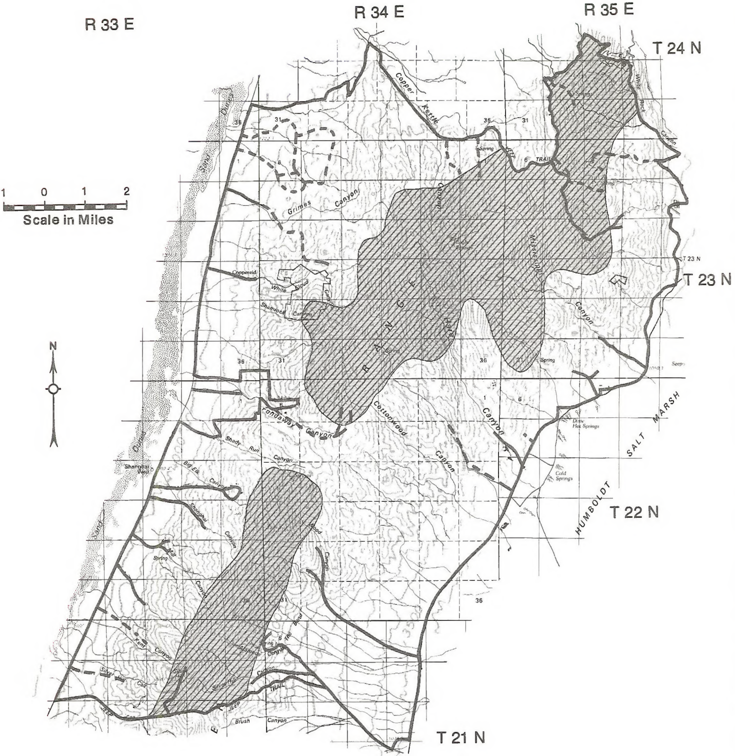
LEGEND

▨ FORESTED

MAP-11

WOODLAND

STILLWATER RANGE NV-030-104



LEGEND
▭ DEER YEARLONG
▨ MOUNTAIN LION

MAP-12

WILDLIFE HABITAT

STILLWATER RANGE NV-030-104

DESATOYA MOUNTAINS NV-030-110/060-288

The Desatoya Mountains WSA lies along the Churchill County-Lander County line, with the majority of the WSA found in the southeast corner of Churchill County, Nevada. Fallon, Nevada, is approximately 60 miles by road to the west and Austin, Nevada, lies 50 miles to the east. This WSA contains 51,262 acres of public land and is located primarily within the Clan Alpine Planning Unit of the Lahontan Resource Area. Roughly 8990 acres of the WSA is in the Shoshone-Eureka Resource Area of the Battle Mountain District. There are 120 acres of private land which lie along the Topia Creek Road and are cherrystemmed out of the WSA, but which are surrounded on all sides by the study area.

The WSA boundary is formed primarily by roads documented during the intensive inventory and by legal descriptions, with smaller segments of the boundary lying along U.S. 50, the Carroll Summit highway and private property lines. The best access to the WSA is provided via U.S. 50 and the Carroll Summit highway. Roughly 2½-3 hours are required to drive to the WSA from Reno, Nevada, the nearest metropolitan area.

This WSA contains Desatoya Peak (elevation 9973 feet) which is the highest peak in the Desatoya Range and Churchill County. The topography is extremely rugged and mountainous throughout much of the WSA. Uses of the area include recreation and grazing.

Criterion No. 1: Evaluation of Wilderness Values

Component No. 1: Quality of the Area's Mandatory Wilderness Characteristics

A. Naturalness

With few exceptions, the WSA is in an extremely natural state. Mining is non-existent both in the study area and along its boundaries and the only man-made features found in the unit are fences, spring developments, one cabin, cherrystem roads and ways.

A total of two spring developments and three watering troughs are found in the WSA, all of them located along the Topia Creek drainage (Map 13, R-12). Approximately four miles of fenceline are spread among four areas, with the longest being a 1½ mile segment just west of Cedar Creek in the extreme northern part of the study area.

Roughly eight miles of ways, divided among twelve separate segments, are located in the WSA and the vast majority of these are in extremely poor condition. Most of them are found along the boundaries, extending only a short distance (one mile or less) into the study area. The major exception is the three mile long segment (W-11) connecting the Cedar Creek road to the upper Topia Creek road. This segment is extremely bad also, and totally impassable much of the year. Portions of it are visible from ridgetops to the south, causing a minor impact upon apparent naturalness. The one cabin in the WSA also is located beside this way.

A total of 12 miles of cherrystem roads extend into the WSA. At first glance this may seem to be a large amount of mileage in a study area of this size, however, it is divided among 13 separate road segments, most of them relatively short. These cherrystemmed roads and their lengths are as follows:

Bald Mountain (R-8)	.20 miles
Big Dens (R-4)	.20
Billie Canyon (R-11)	.70
Cedar Canyon (R-13)	1.10
Cold Springs (R-1)	.20
Fenceline (R-9)	1.40
Little Dens (R-5)	.30
North Park (R-6)	.30
Pony Canyon (R-2)	.30
Rock Canyon (R-3)	.30
Smith Creek (R-10)	1.70
South Park (R-7)	.50
Topia Creek (R-12)	4.80
TOTAL	12.00 miles

Eight short cherrystems, totaling 2.3 miles, extend from the western boundary to the base of the mountain. Another 3.8 miles of roads are found in the three road segments south of the Churchill-Lander county line on the east side of the WSA. The Cedar Creek road extends roughly 1.3 miles into the area through dense vegetation along the bottom of the creek.

All of the above mentioned roads have relatively minor impacts upon the naturalness of the WSA. They are of extremely low standard and can be seen only from the areas immediately around them due to both good vegetative and topographic screening.

The Topia Creek Road is by far the largest cherrystem road segment in the study area, extending approximately 4.8 miles from the eastern boundary through 40 acres of private land up to the two spring developments along the ridgetop. About .6 mile from the eastern boundary the road has become totally impassable for more than a mile. As a consequence access to the patented land, upper Topia Creek and the ridgetop is now being gained by a 1.8 mile way (W-10), .8 mile of which recently has been created through E½ Sec. 29 and SE¼ Sec. 20, T. 18 N., R. 38 E. This connects with the existing way in NE¼ Sec. 32, T. 18 N., R. 38 E. This way eventually passes through a piece of patented land forming part of the eastern boundary before it connects with the Edwards Creek road .4 mile north of Basque Summit.

Most of the Topia Creek road is well hidden due to its location in the drainage, the surrounding topography and the abundance of vegetation along much of the route. Only at its upper reaches, where the landscape becomes more rolling and vegetation is sparse, does the road impact the apparent naturalness of the area. From the ridgetop the road scar can be seen when looking back down the canyon. Another impact upon naturalness which may be seen from the ridgetop vantage point (NE¼ Sec. 24, T. 18 N., R. 37 E.) is the way leading north down Cedar Creek. This is due to the fact that the way follows the drainage downhill in a relatively straight line through sparse vegetation for the first 1.5 miles. Also, off-road vehicles unable to negotiate this way have created an additional switchback just to the west in their attempts to reach the ridgetop.

The only outside sights and sounds that impact this area's naturalness are those associated with road traffic. Vehicles on U.S. 50 can sometimes be seen from the main ridgeline, however, they are so far distant that they cannot be heard. Dust clouds from traffic on roads crossing the flat west of the WSA also may be seen from the higher elevations. Traffic along the eastern boundary is extremely sparse and is often hidden due to the surrounding topography.

Two fenceline segments and the two spring developments lie along roads and may require infrequent motorized access and/or use of motorized equipment. This activity would constitute additional outside sights and sounds causing temporary impacts on naturalness.

Conclusion

The Desatoyas WSA remains in a natural state to an exceptional degree. There are no mining operations or prospects within the study area. Range improvements are few in number and scattered throughout the unit. Ways and cherrystem roads constitute the only substantial impacts upon naturalness and even these impacts are relatively unnoticeable due to the wide spacing between them and the general prevalence of natural screening. Only along the ridgetop where the Topia and Cedar Creek drainages meet does the impact of a road and way affect the apparent naturalness of the area. Even then, these impacts are minor compared to those found in the other three study areas and they are substantially unnoticeable in the area as a whole.

B. Outstanding Opportunities for Solitude and Primitive and Unconfined Recreation

1. Solitude

The size (51,262 acres) and configuration of the WSA are generally conducive to outstanding opportunities for solitude. The Desatoya Mountains WSA is about seventeen miles long and ranges from four to six miles in width.

Topographic screening is good to excellent throughout the unit, particularly on the west side where the topography is highly dissected. West of the main ridgeline and at the north end of the WSA there are numerous drainages formed by intermittent streams, many of them with steep cliffs and rock outcrops. Three perennial stream drainages, all with steep, confined canyons, are found in the southwest quarter of the area. At the higher elevations these open into small basins. Three other perennial streams also are found on this side of the study area. In general, the area may be characterized as rugged, mountainous and possessing excellent topographic screening.

East of the ridgeline the topography is more rolling and not as highly dissected. Nonetheless, topographic screening is still good due to the large number of drainages in the area. The headwaters of five perennial streams - Smith, Pole, Edwards, Milkhouse and Campbell Creeks - are found here as well as half a dozen other drainages which flow intermittently. Although screening is not as good as on the west side of the study area, relief is still such that solitude opportunities are enhanced by the topography.

Vegetative screening varies in the WSA. The main ridge itself and the higher elevations on both sides of the ridge from the Carroll Summit road on the south to Topia Creek on the north have virtually no vegetative screening, only grasses and low growing scrub species such as low sage. East of the ridgeline all of the perennial streams and several of the intermittent ones are vegetated with aspen, willow, wild rose and other species found in riparian areas. At the lower elevations scattered stands of pinyon pine and juniper are found. Vegetative screening is good along these drainages and at these lower elevations. North of Topia Creek pinyon-juniper predominates in relatively thick stands, providing even better screening. The west side of the WSA generally has excellent vegetative screening. Thick stands of pinyon and juniper blanket much of the mountain here and in places extend well onto the alluvial fan. Isolated stands of mountain mahogany are found here also. As on the east side, all of the perennial streams and many of the intermittent ones are lined with riparian species such as wild rose, aspen and willow. In addition, many of these drainages support several species of wildflowers and berries.

Opportunities for a visitor to find a secluded spot are closely related to topographic and vegetative screening. The west side of the study area and much of the north end provide excellent opportunities. The combination of dense vegetation and the highly dissected, convoluted landscape creates numerous opportunities for a visitor to isolate himself from others. It would be somewhat more difficult to experience such isolation on the east side of the unit. Visitors would need to place more distance between themselves and other users in order to experience a feeling of seclusion, primarily due to the relatively sparse vegetative screening at the higher elevations.

As discussed in the Naturalness section above, traffic on U.S. 50 and dust clouds from vehicles on roads crossing the flat west of the WSA may cause minor impacts upon the feeling of solitude experienced by visitors looking to the west from the higher elevations of the WSA.

The impacts of aircraft overflights on the study area are discussed in Section II.A., to this report. It should be noted, however, that while the airspace over the WSA is part of the Military Operating Area, its use is not restricted like it is over much of the other three WSAs discussed in this report. In addition, the Desatoyas WSA is situated roughly fifteen miles east of Dixie Valley, the main corridor used by naval aircraft during their training missions. Consequently the impacts upon solitude due to aircraft overflights are less in the Desatoyas than in the other three WSAs in the resource area.

The Navy has applied for permission to place a small solar--powered radar site in NW¼ NW¼ Sec. 10, T. 18 N., R. 37 E. It is anticipated that this would have to be serviced monthly by helicopter thereby impacting the solitude experienced by a visitor to the immediate area. This impact would be short lived (30-45 minutes once a month) however, and since the site is located at the extreme northwest corner of the WSA at a low elevation it is unlikely that solitude opportunities would be significantly affected.

Localized and seasonal ranching activities (e.g. roundups, salting, maintenance or range improvements) create minor impacts on solitude.

2. Primitive and Unconfined Recreation

Day hiking opportunities are excellent, especially along the western side of the WSA. Most of the canyons in this area provide outstanding opportunities for a visitor to hike to the head of the drainage and return the same day. Dense riparian vegetation could be an impediment in some places, though not a major one. Game trails can be found in several of the drainages and can be used as travel routes.

Backpacking and camping is good to excellent due to the diverse terrain, extremely scenic surroundings, general availability of shade and water and good access to much of the area. The rugged terrain and numerous east-west trending canyons provide a major element of challenge to a backpacker, especially one traveling along or near the main ridgeline. Small, scenic camping spots are located throughout the unit, especially near springs and aspen patches.

Horseback riding opportunities are good to excellent along the ridgeline and on the east side of the study area where the topography and vegetation do not restrict travel. Riding opportunities are limited on the west side of the ridge because of the steep terrain, however, travel in many of the canyon bottoms themselves would be quite possible.

Deer hunting is good throughout the area and hunting for sage grouse and chukar is good, especially around the northeast portion of the unit near the Edwards Creek drainage. Cutthroat Trout (probably the Humboldt strain) are present in Edwards Creek and possibly Smith Creek. (Positive identification of specimens taken from these creeks has not been completed). Brook trout are found in Big Dens Creek. All of these fish are quite small however, and fishing would not be a preferred recreational activity.

A snow pack is maintained on the ridge line above the 7500' elevation for four to five months a year. Cross country skiing in the area would be good to excellent. Limitations are imposed on this activity by poor winter access to the east side of the area and frequent sharp winds at the higher elevations.

Vegetative collecting in the canyons of the west side is excellent and being practiced at the present time. Pine nuts and berries, especially gooseberries and elderberries, are most frequently collected.

Sightseeing, nature study, bird watching and photography opportunities all are excellent within the WSA. The landscape is extremely varied and contains a large number of interesting features including steep canyon walls, cliffs, rock outcrops, perennial streams and a long undulating ridgeline. The lower part of Big Dens Canyon is a narrow, twisting, vertical walled defile with colorful rock spires along its length culminating in a 30' waterfall and a steep climb in order to gain access to the upper canyon. Several other canyons, including Little Dens, Willow, Rock and Cold Springs, contain additional interesting geologic features. Riparian areas support complex plant communities. Aspen, willow, wild rose, gooseberries, elderberries, Indian paintbrush, monkshood, ferns, various small cacti and numerous other wildflowers are found along these drainages. Mountain mahogany stands are found at higher elevations. A variety of animals including mountain lion, mule deer, gray fox, chukar, sage grouse, red-tailed hawks, golden eagles, pika and wild horses can be seen in the WSA.

Riparian areas provide important habitat for several birds including goshawks, great horned owls, hummingbirds and other passerine birds. The WSA is also historical range for Desert Bighorn sheep. The Nevada Department of Wildlife is currently conducting studies to evaluate the potential for reintroducing this species into the area around Big and Little Dens Canyons.

Views from the ridgetop are outstanding. The Toiyabe Range and Arc Dome 40 miles to the east across Smith Creek and Reese River Valleys are clearly visible as are the Clan Alpine and Stillwater Ranges to the west. On a clear day the Sierra Nevada, over 100 miles to the west, may be seen.

Conclusion

Opportunities for solitude and primitive and unconfined types of recreation are outstanding in the best sense of the word. The size, configuration and natural screening throughout the vast majority of the area combine to allow a visitor to experience a feeling of seclusion and solitude, broken only by infrequent aircraft overflights.

Recreational opportunities are outstanding both from a qualitative and quantitative standpoint. There is a wide diversity of opportunities and the individual opportunities themselves provide a high quality experience in virtually every case. Comparatively, the Desatoya Mountains WSA probably provides some of the best solitude and primitive recreational opportunities in central and western Nevada.

Component No. 2: Special Features: Quality of the Area's Optional Wilderness Characteristics

Ecologically, the study area is both diverse and complex. As discussed earlier, several distinct vegetative communities are found between the base of the range at 6300' and the top of Desatoya Peak at 9973' - sagebrush-greasewood, pinyon-juniper, mountain mahogany, and riparian areas in both perennial and intermittent stream channels. Indeed, the fact that there are eleven perennial streams and nearly a dozen intermittent ones in this 51,262 acre WSA indicates the importance of riparian areas to the overall ecologic balance of the study area.

No threatened or endangered species are known to occur within the WSA. However, the great diversity of species found in the area, both plant and animal, contribute significantly to the area's wilderness quality. Approximately 100-125 wild horses are estimated to live within the study area.

Geologically, the rocks of the area are Tertiary volcanic, primarily quartz latite and rhyodacite with the prominent cliffs on the western side consisting of columnar-jointed quartz latite welded tuffs. Intrusive bodies of dacite which formed somewhat later are found in the Big Dens area. Weathering of these rocks over time has helped create much of the geologic interest and beauty found in the WSA.

As discussed earlier, the area is highly scenic. Views looking outside the study area toward the Shoshone and Toiyabe Ranges on the east and the Clan Alpine, Stillwater and Sierra Nevada Ranges on the west are outstanding. There are numerous canyons, ridges, riparian areas and rock outcrops throughout the interior of the WSA which are extremely scenic themselves. The Big Dens and Willow Creek areas are well known locally for their scenic quality.

A number of historic and prehistoric activities occurred around the edge of the study area. The Cold Springs pony express station (1860-61) is located in Sec. 33, T. 18 N., R. 37 E., just outside the WSA. An Overland Stage station ruins is located on the Edwards Creek Road in Sec. 4, T. 18 N., R. 38 E. Portions of the western and northern boundaries of the study area follow the old pony express and stage routes. Some historians believe that pony express riders occasionally used Pony Canyon to cross the Desatoyas in periods of good weather.

Woodcarvings made by Basque sheepherders on aspen trees during the early 1900's can still be found in several drainages.

Indians are known to have attacked the Cold Springs pony express station from open camps in the western foothills of the Desatoyas. They used the area as both a hunting ground and a source of pine nuts, berries and herbs. The derivation of the word "Desatoya" is largely unknown, however it is believed to be a Shoshone work meaning "cold" or "big-black" mountains, possibly a reference to the limited sunlight many of the more deeply incised canyons receive during the day and the general appearance of the range from the west. On many small knolls throughout the area, but particularly on the west side, one can still find lithic scatters, evidence of use of the area by its former inhabitants. A pictograph site and Topia Cave, a significant archaeological site probably associated with periods of hunting and pine nut gathering, are found along the Topia Creek drainage. A total of 15 aboriginal and four historic sites have been identified to date.

Conclusion

The special features of the study area are both diverse and important. Several unique ecologic relationships are present as is a wide variety of plant and animal species. The WSA is extremely scenic and historically intriguing. The area's potential for educational purposes or scientific study is good and it is likely that such uses would increase should it be designated as wilderness. The qualities of the area are already well known to a large local public as well as some non-local publics. Whether or not the ecologic and scenic aspects of the study area would ever assume national significance remains to be seen, however designation would undoubtedly serve to inform more people of the unique values found in the area.

Component No. 3: Multiple Resource Benefits: The Benefits to Other Multiple Resource Values and Uses Which Wilderness Designation of the Area Could Ensure

The standard list of benefits to other resources listed in Section II.A., will result if the Desatoya Mountains WSA is designated as statutory wilderness. These benefits result from the maintenance of present, undisturbed conditions, and would accrue to wildlife, wild horses, watershed, air quality, scenic quality, cultural resources and recreation.

It should be noted, however, that much of this area is extremely fragile. Should major surface disturbing activities such as road-building or mining occur in the future, particularly in riparian areas, all of the resources listed above would be adversely impacted, in some cases severely. From this standpoint, preservation of the area in a natural state should be viewed as a significant multiple resource benefit to be realized as a result of wilderness designation.

Component No. 4: Diversity in the National Wilderness Preservation System

This component is discussed at length in Section II.A., of this report. It is important to once again note though that this WSA is one of only two in the nation, both in the Carson City District, which are listed as having representation of the Mountain Mahogany-Oak Scrub ecosystem.

Criterion No. 2: Manageability

The basic thrust of management of the Desatoya Mountains study area, should it be designated as wilderness, would be to provide opportunities for primitive recreation and solitude in an undisturbed natural setting. Emphasis would be placed, at least initially, on the canyons in the southwest part of the area. Along here lie some of the best known and most easily accessible features of the WSA and it is expected that this area will receive a concentration of use in the short term. It would be essential that this situation be closely monitored, and quite possible that measures would eventually need to be taken to disperse use by encouraging visitation to less well-known areas within the wilderness. It seems unlikely that limitations on use of these more popular areas would be required.

Of more immediate management concern is the effect which wilderness designation would have on the use of the area, primarily east of the ridge, by hunters and other recreationists who presently gain access to the area by motorized vehicle. The terrain on the east side of the WSA is rolling and relatively open, vegetation is low in many areas and off-road travel would be fairly easy. In the short-term, there may be some animosity against wilderness designation of the area displayed by these individuals, and placement of signs at major access points and patrolling of the area during peak periods of use such as hunting season will be necessary, especially if any road restrictions or closures are implemented. A positive public relations and education effort should be able to alleviate this problem in the long term.

Five cherrystem roads penetrate the area on the east side of the WSA. In each case these roads are used primarily by the grazing permittee as access to fences and spring developments, and secondarily by hunters for access to the area during hunting season. In all five cases, if the public relations and education efforts described above are carried through, a limitation on use of these roads to the grazing permittee and the BLM (for administrative purposes) would protect the wilderness values of the area, allow hunting to continue in a more natural atmosphere than at present, and protect the rights of those ranchers who depend on the use of these roads for their livelihood.

Vehicular access to the west side of the study area is less of a concern due to the severe topographic relief and the fact that the eight cherrystem roads are generally short and tend to end at the base of the mountain. Nonetheless, it would be extremely advantageous either to close or place use restrictions on these 2.3 miles of roads and establish the western boundary totally along the present legal description which currently comprises the vast majority of this boundary. By doing so three important manageability goals would be accomplished: first, an easily identifiable boundary could be established along all major access points on the west side; second, the possibility of either inadvertent or intentional extension of a cherrystem road is eliminated; and finally, base camps, parking areas and trailheads could be established just outside of the wilderness boundary thereby preserving the wilderness character of the area itself and providing needed services for recreationists outside that area in which restrictions are more stringent. Admittedly, it will be somewhat more difficult to establish a legal description as a boundary on the west side of the area but it is not without precedent and, since this line generally follows the base of the mountain range and access is limited, it seems to provide a logical boundary given the seedings, roads, previous mineral exploration and relatively flat landscape found just to the west.

The northern and southern boundaries should be easily managed since they lie along well established roads.

The southeast corner of the area presents a slight manageability problem due to the present boundary alignment. The existing boundary was created in order to eliminate most of three ways and a small area of former mining activity, however, a significant portion of it in Sec. 4, T. 16 N., R. 38 E. cannot be identified on the ground. From a manageability standpoint it would be preferable to redraw the boundary by going south along the Campbell Creek road, around 40 acres of patented land, up the drainage immediately to the west to point 8777 in SE¼ SW¼ NW¼ Section 5, T. 16 N., R. 38 E., and then south along the Churchill-Lander county line until it meets the existing boundary. This would eliminate those unnatural features originally intended to be excluded from the area as well as provide a more logical, readily identifiable boundary. By doing this, approximately 54 acres would be added to the WSA while roughly 327 acres would be deleted, for a net loss of 273 acres to the size of the study area.

In a similar vein, 51 acres between the road and fenceline in Sec. 20, T. 17 N., R. 38 E. should be added to the WSA. The fenceline is not a major intrusion and it seems illogical to have a 51 acre parcel actually inside, but technically outside, the WSA. The area would be much easier to administer if the cherrystem road were the only management concern in this vicinity.

Closure of all ways would significantly enhance wilderness values. This is particularly true of those areas around ways W-10 and W-11 (Map 13). W-10 did not exist at the time of the intensive inventory and has been created since then as an alternative route to upper Topia Creek. W-11 connects the Cedar Creek road (R-13) to the Topia Creek road (R-12). Closure of these two ways would enhance manageability of the entire northern third of the WSA by limiting vehicular access to the main ridgeline and eliminating two intrusions upon an otherwise natural setting.

Manageability of the area also would benefit greatly if restrictions on access were placed on the Topia Creek (R-12) and Cedar Creek (R-13) roads. If access was limited to the grazing permittee (who is also the owner of patented land in Sec. 20 and 21, T. 18 N., R. 38 E.,) and the BLM, both management opportunities for the area and wilderness values would be significantly enhanced. Management of the area would not be impossible if such restrictions were not imposed, however, it would probably prove to be more difficult.

There are 120 acres of cherrystemmed private lands surrounded by the study area. While it would be desirable to obtain this acreage, access is already provided and it is unlikely that significant non-conforming developments would take place on this land.

As mentioned earlier, the Fallon NAS proposes to install a small, solar-powered radar site in NW¼NW¼ Sec. 10, T. 18 N., R. 37 E. This site would occupy an area of 250 square feet and have an antenna extending

10 feet into the air. It appears that this activity would comply with the Interim Management Policy and Guidelines for Lands Under Wilderness Review (IMP). It is anticipated that this facility would have to be serviced monthly by helicopter. Such servicing would cause no direct management problem, especially since the facility would be located near the boundary and away from the most significant features of the WSA. This could probably be accommodated under the Wilderness Management Policy and any wilderness management plan eventually written for the area.

As discussed in Section II.A., implementation of a Supersonic Operating Area (SOA) in the airspace above the WSA would have significant impacts on solitude opportunities in the area. From a manageability standpoint, it would be necessary to educate the recreating public about this activity in order that they not entertain unreasonable expectations about solitude opportunities.

Roughly 2100 acres of land at the extreme northern end of the study area are overlaid with recently issued (1981) oil and gas leases. No exploration has yet occurred and the potential for development is unknown.

As noted earlier, there are no mining claims inside the WSA nor are there any areas of historic mining activity. A 40 acre materials site sits astride the southern boundary of the study area.

Firewood and Christmas tree cutting has occurred in the past in the flats along the southwest boundary. This has not taken place for several years however and only minor manageability problems, such as small amounts of trespass firewood cutting, may occur as a result of this previous activity.

Conclusion

Potential manageability problems may arise more from recreationists' behavior rather than because of resource conflicts. Minor boundary adjustments are advisable as are restrictions on the use of certain roads. A carefully thought out management plan and a positive public education effort should be able to mitigate most of these potential problems.

QUALITY STANDARDS

Standard No. 1: Energy and Mineral Resource Values

The Desatoya Mountains WSA is located in the western half of the Desatoya Mountains, a typical block faulted range of the Basin and Range province. The oldest rocks exposed in the WSA are Miocene volcanic flows, tuffs, and welded tuffs of rhyolitic to latitic composition. A sequence of lacustrine sedimentary rocks comprised of pebbly mudstone, diatomaceous shale and tuffaceous siltstone and sandstone was deposited coevally with the volcanics. Older rocks, chiefly Triassic or Jurassic metavolcanic rocks and Cretaceous granitic rocks are exposed at the southern end of the Desatoya Mountains just outside the WSA boundary. Also, Paleozoic clastic and volcanic rocks are exposed north of the WSA in the New Pass Mountains. The oldest structures exposed in the Desatoya Mountains are folds in Miocene sedimentary rocks, which together with some high angle reverse faults suggest a compressional tectonic event sometime in the Middle Tertiary. Normal faults of Late Tertiary age trend northeasterly and northwesterly within the WSA and form the western range front fault.

No known metallic mineral deposits are located within the WSA, however, the Gold Basin and Eastgate mining districts are located near the southeast and south boundaries, respectively. Production from these districts total approximately $200,000, chiefly from precious metals. The deposits occur as quartz veins in altered rhyolite. Results of a stream sediment survey conducted by Great Basin GEM Joint Venture for the BLM showed weak copper, mercury, uranium and/or zinc anomalies in the Cedar Creek-Topia Creek area and weak barium, copper, mercury, chromium, lead and tin anomalies in the Smith Creek-Campbell Creek area. A followup stream sediment survey by the Carson City District Office in the Cedar Creek-Topia Creek area confirmed the original results, but failed to show any continuation of the anomaly into the interior of the drainage basin.

Exploration in the Desatoya Mountains has not been extensive in the past and with the exception of ASARCO's prospect at Cold Springs, is inactive. The Cold Springs prospect, formerly worked by Phelps Dodge, has potential for a Bonanza-type precious metal deposit (GEM, 1983). This prospect is located just west of the WSA boundary.

The western two-thirds (38,000 acres) of the WSA has been rated as low favorability with a low confidence level for the occurrence of metallic minerals. The eastern one-third (13,000 acres) has been rated moderate with a low confidence level. The moderate rating is based on the proximity of the Gold Basin and Eastgate mining districts, the structural setting, and the presence of two geochemical anomalies.

No known nonmetallic mineral deposits are located within the WSA. Some potential exists for a zeolite deposit within the Miocene lacustrine sedimentary rocks. Overall, favorability for the occurrence of nonmetallic minerals is considered low with a low confidence level.

A small materials site (40 acres) has been granted to the Nevada Department of Transportation in the extreme southeast corner of the study area ($S\frac{1}{2}$ $SE\frac{1}{4}$ $NW\frac{1}{4}$ and $N\frac{1}{2}$ $NE\frac{1}{4}$ $SW\frac{1}{4}$, Sec. 18, T. 16 N., R. 38 E.), although no extraction of materials has yet taken place in the 30 acres north of the Carroll Summit highway. This grant was made in 1935.

There are no known geothermal deposits located in the WSA. Hot springs located east of the WSA in Smith Creek Valley occur along a structure that extends into the WSA. Temperatures as great as 205° F. have been recorded (GEM, 1983).

No lands have been leased for geothermal resources within the WSA and no exploration requiring a permit has been conducted.

Favorability for the occurrence of geothermal resources is considered moderate in the eastern one-third (13,000 acres) of the WSA and low within the western two-thirds (38,000 acres). The confidence level for these ratings is very low (GEM, 1983).

No known oil and gas deposits are located within the WSA. Based on the geologic environment and the lack of surface indications, favorability for the occurrence of oil and gas is considered very low with a low confidence level (GEM, 1983). Approximately 2,100 acres located on the northern boundary of the WSA are leased for oil and gas. No exploration has occurred to date.

No critical or strategic minerals are known to occur within the WSA.

Conclusions

1. There are no active mines or energy developments located within the WSA.

2. No exploration is occurring within the WSA. Mining exploration is occurring just outside the WSA at Cold Springs. Potential for development within the WSA is poor.

3. No active mines or energy developments exist adjacent to the WSA.

4. The western two-thirds of the WSA is rated low favorability for the occurrence of all mineral resources. The eastern one-third is rated moderate favorability for geothermal resources and metallic minerals.

5. There are no mining claims, 2,100 acres under oil and gas lease, and one 40-acre mineral material right-of-way astride the boundary of the WSA.

Standard No. 2: Impacts on Other Resources

In addition to those impacts discussed in Section II.C., the following impacts relate specifically to the Desatoya Mountains WSA. Further detail regarding impacts under each alternative may be found in Chapter Four of the Lahontan RMP.

A. Recreation

As discussed earlier, there would be negative impacts upon motorized hunting opportunities which would require mitigation measures. Approximately 1.8 percent of the resource area would be closed to ORV use should the entire study area be designated as wilderness by Congress. Backpacking, day hiking and horse packing opportunities would be enhanced. Recreation use projections may be found in Section IV of this report.

B. Range

Portions of five allotments, operated by three different permittees, are located in the WSA. The Edwards Creek allotment has not been grazed for the past two years and the other four allotments are utilized primarily in the spring, summer and fall. The future quality of grazing is expected to remain the same.

Cherrystem roads would remain open to permittees. With designation, livestock operators would generally be required to manage their livestock on horseback or on foot while leaving their vehicles on border roads or at the terminus of a cherrystemmed road. There would be few impacts on present grazing management practices since all major range improvements are located alongside or nearby these roads. The only known proposed range improvement which may conflict with the Wilderness Management Policy, should the area be designated as wilderness, is a one mile long drift fence at the head of Cold Springs Canyon. New rangeland improvements may be constructed only if they are determined to be necessary for the purpose of resource protection (rangeland and/or wilderness) and the effective management of these resources rather than to accommodate increased numbers of livestock. A new improvement could not be justified solely on the basis that it would aid intensive management resulting in increased grazing.

C. Forestry

Within the WSA there are approximately 2,240 acres of pinyon-juniper, containing about 13,400 cords of wood, which are suitable for timber sales. Roughly 1,100 acres of this total is found on the west side of the WSA between Dry and Willow Canyons, while the remaining acreage is scattered throughout the study area in parcels ranging from two to 300 acres in size. Map 16 indicates the main areas where the acreage is located. Approximately six percent of the annual allowable harvest of the RMP area is contained in the Desatoya Mountains WSA. This wood could not be harvested if the area were designated as wilderness.

D. Cultural

Unless an extensive cultural resources inventory is undertaken prior to designation it is likely that smaller sites may be obliterated or isolated artifacts removed as a result of increased visitation. This impact will be offset somewhat by the additional protection afforded the area due to limited vehicular access.

E. Lands

Access would still be provided to the 120 acres of private lands surrounded by the study area.

F. Energy and Minerals

Fifty-one thousand two hundred sixty-two (51,262) acres of public land would be withdrawn from mineral entry. Two thousand one hundred (2,100) acres of lands under oil and gas lease would be affected. Thirteen thousand acres of land rated as having moderate favorability for the occurrence of metallic minerals and geothermal resources will be withdrawn (GEM, 1983). A 40 acre material site right of way will be affected.

Wilderness designation of the Desatoya Mountain WSA would have minimal adverse impacts regarding the exploitation of energy and mineral resources. Only 25 percent of the WSA has a moderate favorability for metallic minerals and geothermal resources. No high favorability lands are located within the WSA. Exploration within the WSA is insignificant and exploration and development outside the WSA is minimal. Potential for mineral development is considered low. Mineral encumbrances are limited to one 40 acre material site right-of-way and 2,100 acres under oil and gas lease.

G. Wildlife

Adverse impacts to wildlife resulting from wilderness designation would be those listed in Section II.C., of this report.

H. Others

No significant adverse impacts will result to water quality, wild horses, air or soil quality.

Conclusion

Negative impacts upon other resource uses as a result of wilderness designation are relatively few and should be able to be mitigated.

Standard No. 3: Impacts of Non-Designation on Wilderness Values

In addition to the general points made in Section II.C., the following are likely to impact the wilderness values of the area if it is not designated as wilderness.

In the short-term the status quo is likely to prevail, given the physical aspect of the area and the apparent disinterest in its' mineral prospects.

Some additional rangeland improvements, primarily spring developments and fencelines, may be installed although none of those presently anticipated would significantly impact wilderness values.

Woodland products harvest could adversely affect the mandatory wilderness characteristics on up to 2,240 acres in the study area.

No restrictions would be placed on aircraft overflights and helicopter servicing of a proposed naval radar site. Solitude opportunities could be impacted in the long term, although not as severely as in the other three WSAs, if the number or intensity of sonic booms caused by planes from the Fallon NAS increases substantially.

Mineral or energy related activity and/or road building would diminish the wilderness characteristics of the area significantly should they occur. In fact, any activity proposed for the WSA which would cause major surface disturbance would have a significant impact upon the wilderness values of the study area.

Conclusion

Short-term impacts are few and relatively insignificant. Long-term impacts of non-designation have the potential to impact the wilderness values of the study area substantially.

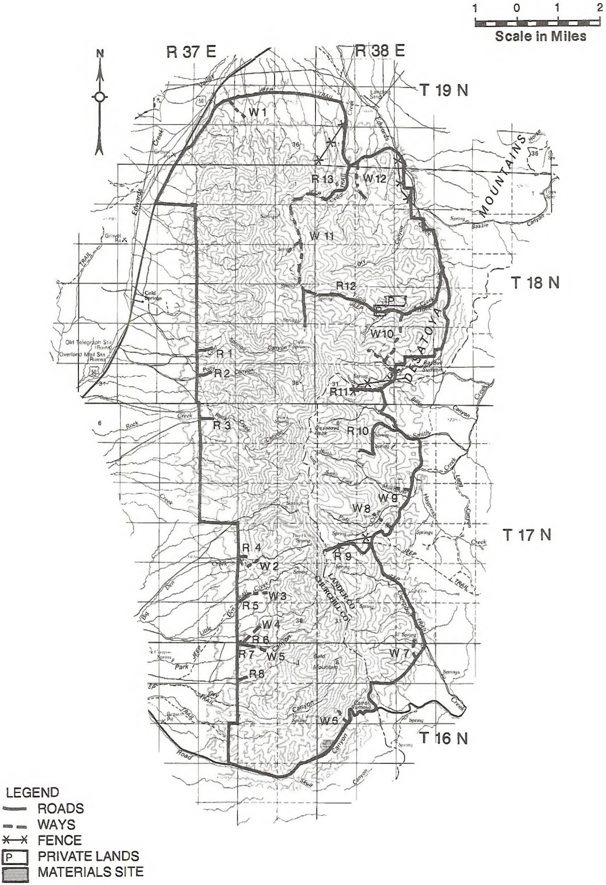
Standard No. 4: Public Comment

Standard No. 5: Local Social and Economic Effects

Standard No. 6: Consistency with Other Plans

These standards are addressed in the Resource Management Plan itself and in Sections II.C. and Appendices B and C of this report.

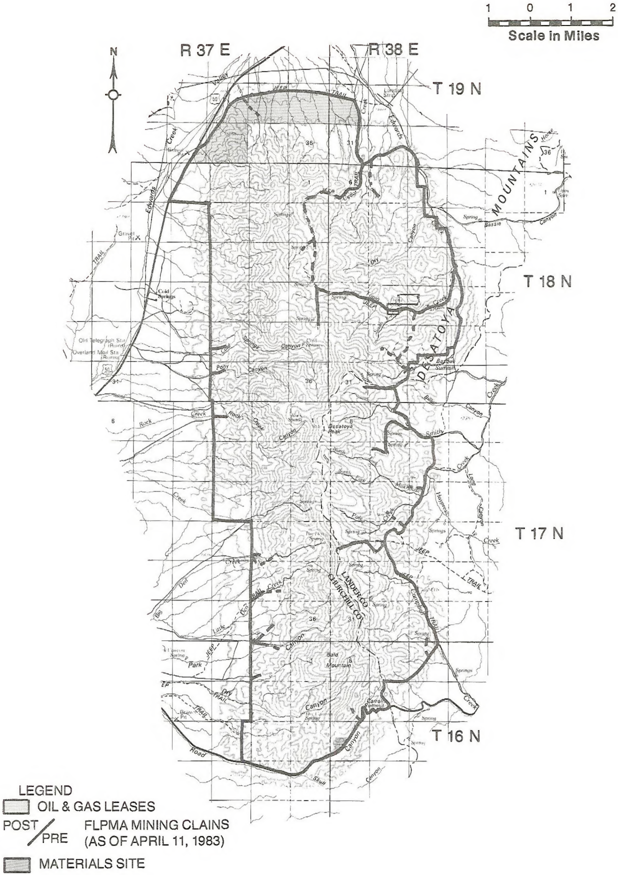
Desatoya WSA Maps



MAP-13

EXISTING SITUATION

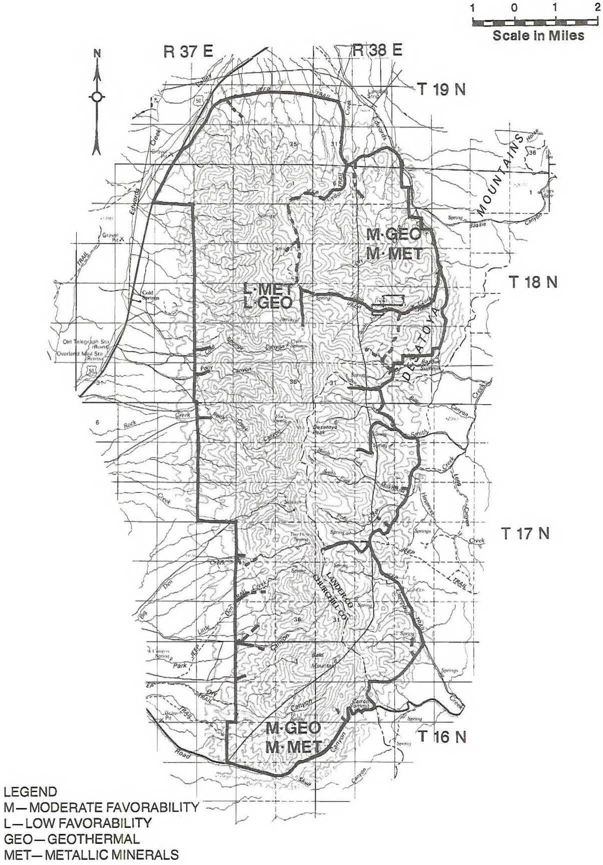
DESATOYA NV-030-110



MAP-14

MINING CLAIMS & MINERAL LEASES

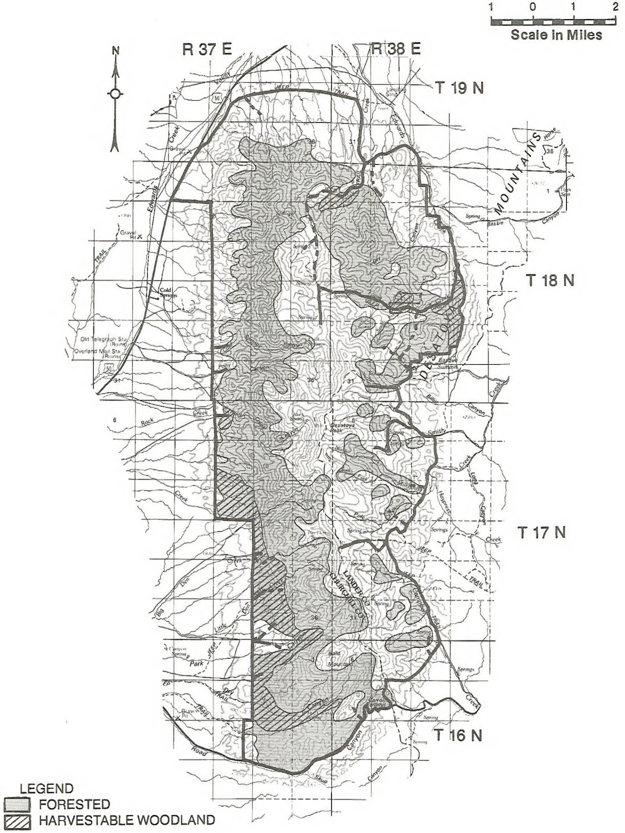
DESATOYA NV-030-110



MAP-15

MINERAL POTENTIAL

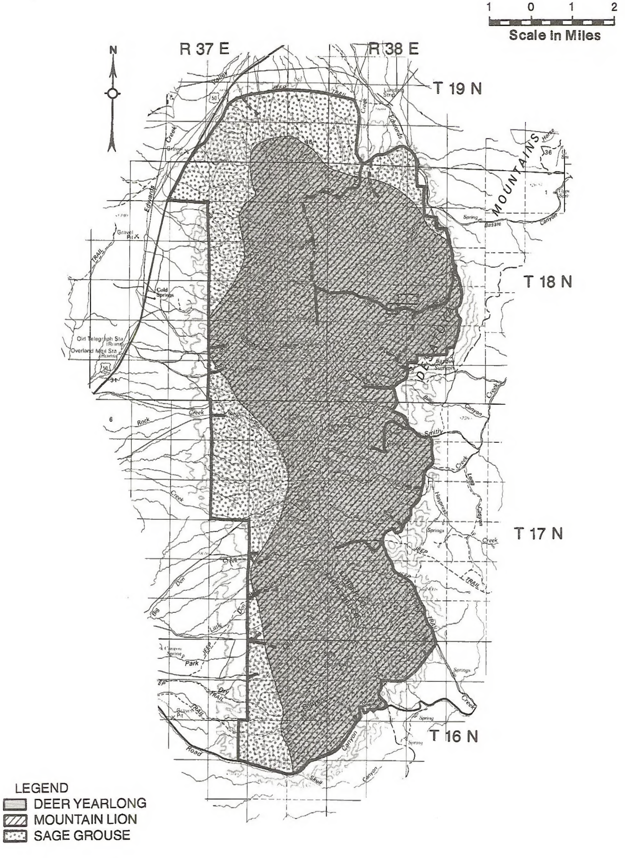
DESATOYA NV–030–110



MAP-16

WOODLAND

DESATOYA NV-030-110



MAP-17

WILDLIFE HABITAT

DESATOYA NV-030-110

JOB PEAK NV-030-127

The Job Peak WSA lies in the central portion of Churchill County, Nevada, approximately 30 miles by road east of Fallon, Nevada. This WSA contains 90,209 acres of public land and is located within the Clan Alpine Planning Unit of the Lahontan Resource Area. There are no private inholdings.

The WSA boundary is formed primarily by county and BLM roads, as well as additional roads documented during the intensive inventory process. Short stretches of the boundary follow fencelines and the Dixie Valley fault scarp. Access to the west side of the WSA is provided by county road 399. The east side of the area is reached via the paved Dixie Valley Road (county road 380) which originates at U.S. 50, twelve miles south of the WSA. Roughly 2-2½ hours are required to drive to the WSA from Reno, Nevada, the nearest metropolitan area.

This WSA contains Job Peak (elevation 8785 feet) which is the highest peak in the Stillwater Range. Its topography is mainly mountainous but includes a large amount of bench land as well. Uses of the area include grazing, recreation and mining.

Criterion No. 1: Evaluation of Wilderness Values

Component No. 1: Quality of the Area's Mandatory Wilderness Characteristics

A. Naturalness

The majority of the Job Peak WSA is in an essentially natural condition. However, the perceived naturalness of certain portions of the WSA are negatively impacted by evidence of human activity along cherrystemmed roads.

Within the WSA there are eleven miles of ways divided among eight separate segments. Ten cherrystem roads, totaling 21.3 miles, penetrate the WSA with about half of these roads found in the northwest portion of the area. These cherrystemmed roads and their lengths are as follows:

East Lee Canyon (R-10)	3.8 miles
East Material Pit (R-9)	.3
Elevenmile Canyon (R-8)	2.5
Government Trail/Pete Canyon (R-3)	6.3
Long Canyon (R-4)	1.8
Poco Extension (R-2)	.7
Shirttail Canyon (R-7)	2.4
Upper Poco (R-1)	.8
West Lee Canyon (R-5)	2.2
West Material Pit (R-6)	.5
TOTAL	21.3 miles

The largest number of physical intrusions are found in the northwest portion of the WSA. Five cherrystemmed roads totaling almost twelve miles in length are found in the vicinity, as well as over seven miles of water pipeline and associated stock tanks in three separate locations. Approximately six miles of fenceline, seven miles of ways, two borrow pits, three cabins, a corral and one small area of historic mining activity also are found in this area.

The southwest quarter of the unit appears relatively natural with the exception of two penetrant cherrystem roads (each roughly two and one-half miles in length), a two mile long water pipeline at the end of one of the roads, a one-half mile long way, a cabin and corral, and a dozen small spring developments.

On the east side of the main ridgeline the WSA remains in an essentially natural condition, both in the mountains and on the alluvial fan. The main intrusions in this area are the East Lee Canyon road (R-10) and old ways leading part way up Coyote Canyon (W-8) and Cain Spring Canyon (W-7). The road has been cherry-stemmed. A small cabin is located at the mouth of Coyote Canyon and the remains of an old mercury retort are located about $\frac{1}{2}$ mile further up the canyon. Roughly two dozen small spring developments are found in the mountainous portion of the area. An old gravel pit is slowly being rehabilitated naturally in the extreme northeast corner of the area.

Two sites, totaling approximately five acres, have been impacted by geothermal exploration conducted in compliance with the Interim Management Policy and Guidelines for Lands Under Wilderness Review (IMP). Both areas have already been rehabilitated, although it will be several years before the impacts will be substantially unnoticeable. These sites are located in SW$\frac{1}{4}$NE$\frac{1}{4}$, Sec 14, T. 18 N., R. 33 E., and NE$\frac{1}{4}$ SW$\frac{1}{4}$, Sec. 16, T. 19 N., R. 34 E. The quality of wilderness characteristics in the immediate vicinity of these impacts has been temporarily diminished.

Outside sights and sounds that impact the area include county road 380 (Dixie Valley Road) and county road 399 (Stillwater Road). Car and truck traffic generally can be seen, but not heard from the higher elevations in the WSA. Dust clouds from traffic on the Stillwater Road and other dirt boundary roads also may be seen from the higher elevations.

Geothermal exploration in Dixie Valley has, in the past, created impacts outside the WSA which can be seen and heard inside the area, primarily along the ridgelines. Such exploration is currently suspended, however, it will quite likely resume when economic conditions improve.

All of the pipelines and most fencelines and spring developments require periodic maintenance. Maintenance is often performed yearly and motorized access is sometimes necessary. Access by vehicles and use of motorized equipment along cherrystem roads would contribute as outside sights and sounds to the impacts on naturalness.

Conclusion

The imprints of man's work are most apparent in the northwest quarter of the WSA from Poco Canyon to just south of West Lee Canyon and east to the main ridgeline. These imprints would be hard for a recreational visitor to avoid and the area should be separated from any suitability recommendation made for the WSA.

The southwest quarter also has several imprints, primarily in Shirttail and upper Elevenmile Canyons. They do not severely affect the apparent naturalness of the area however. Very few imprints exist in the eastern half of the WSA and most of them are well screened by topography and vegetation.

B. Outstanding Opportunities for Solitude and Primitive and Unconfined Recreation

1. Solitude

The size (90,209 acres) and configuration of the WSA are generally conducive to outstanding opportunities for solitude. The Job Peak WSA varies from five to sixteen miles in length and five to fifteen miles in width.

Topographic and vegetative screening ranges from poor to excellent. The gently rising, shadscale and sagebrush covered fans between the east and west boundary roads and the beginning of the mountainous terrain provide virtually no topographic screening and only minimal vegetative screening. The mountainous portion of the WSA on the west side of the main ridgeline provides relatively good topographic screening due to the convoluted landscape, however, vegetative screening is again minimal. The southeastern portion of the WSA, south of East Lee Canyon, may be characterized in the same manner. Only on the east side of the main ridgeline between the northern boundary and south to East Lee Canyon does one find both good to excellent topographic and vegetative screening. The canyons there are deeply incised and vegetation is predominantly pinyon-juniper woodland, often in quite dense stands. There are intermittent streams in several east side canyons, however, there are no perennial streams anywhere in the WSA.

Opportunities for a visitor to find a secluded spot are closely related to topographic and vegetative screening. Opportunities are best in the canyons and dense vegetation on the mountainous east side and almost nonexistent on the alluvial fans on both the east and west sides. In the remainder of the WSA the topography affords some opportunities for a visitor to find a secluded spot, however the lack of vegetative screening means that visitors would have to place more distance between themselves and other users in order to experience a feeling of seclusion. Many of the most interesting features in the WSA are found around the main ridgeline and it may be expected that a good deal of backcountry use would be concentrated there.

Solitude opportunities may be adversely affected in those areas where screening is marginal, particularly on the top and to the west of the ridgeline.

The impacts of aircraft overflights on the WSA are discussed in Section II.A., of this report. Periodic servicing by helicopter of a small solar-powered radar site which the Navy proposes to install downhill from and just east of Job Peak would cause a significant impact, at the time of servicing, on the solitude experienced by a visitor to the immediate area. Such servicing would take approximately 30-45 minutes once a month (see Criterion No. 2: Manageability).

Localized and seasonal ranching activities (e.g. round-ups, salting, maintenance of range improvements) create minor impacts on solitude, primarily in the west half of the WSA.

Geothermal exploration in Dixie Valley adjacent to the WSA has temporarily ceased, primarily due to economic conditions. If and when it resumes the sight of drilling equipment and the attendant noise associated with this activity could adversely affect solitude opportunities on the east side of the WSA.

2. Primitive and Unconfined Recreation

Day hiking opportunities are generally good, particularly on the mountainous east side of the area where a recreationist could climb one of the numerous canyons, walk along a portion of the main ridge and return to his starting point via a different canyon. Game trails can be found in several of the canyons and can be used as travel routes.

Backpacking and camping are good to excellent due to the diverse terrain, scenic surroundings, general availability of water from springs in the higher elevations and good access to the area. Most points of interest and destination points are located along the ridgeline and the eastern face of the mountain range however. Horseback riding is possible throughout much of the unit, although many of the most scenic areas on the east side of the WSA are generally inaccessible to this type of activity due to the rugged topography.

Mountain and rock climbing opportunities are good on the east side of the study area, especially in Big Box and Little Box Canyons where some technical climbing skill and equipment would be needed in order to reach the ridgeline.

Sightseeing opportunities are good to excellent. The main peaks - Job, Lincoln and Shaly - are themselves impressive, as are the views from their summits. Several species of wildlife, including mule deer, mountain lion and Desert Bighorn sheep inhabit the area and at least six species of raptors, including golden eagles and great horned owls, have permanent ranges in the WSA. Canyons on the east side of the area are both scenically attractive and, because of their rugged character, provide an element of challenge to the visitor.

Conclusion

Opportunities for solitude vary considerably, but tend to be best in the mountainous portion of the east side of the WSA. Likewise, the best recreational opportunities are generally concentrated in this area. Solitude and primitive recreation opportunities are marginal in the remainder of the WSA.

Component No. 2: Special Features: Quality of the Area's Optional Wilderness Characteristics

No threatened or endangered species are known to occur within the WSA. The presence of mountain lions, numerous raptors and the recently transplanted Desert Bighorn sheep herd is significant however. It is estimated that fifteen to twenty wild horses live within the area.

Geologically the Job Peak WSA is a typical block faulted range of the Basin and Range Province. Movement along the eastern range front fault has created striking relief. Recent movement along this fault (1954) is evidenced by a fault scarp on the east side of the unit along the base of the mountain range. It is easily seen and in places the earth has been displaced six to seven feet.

The area experienced prehistoric aboriginal occupation and was extensively surveyed in 1979 by a doctoral candidate from the University of Michigan. Some surface collection was done, however, no major cultural sites such as the Topia Creek cave and pictograph site in the Desatoya Mountains WSA were located. A total of six aboriginal sites have been identified.

As mentioned above, the eastern front of the range is quite scenic and Job Peak itself is the highest point in the Stillwater Range.

Conclusion

There are few supplemental values present in the study area. None have a national significance, but the fault scarp and the bighorn sheep are of interest to a large local and some non-local publics.

Component No. 3: Multiple Resource Benefits: The Benefits to Other Multiple Resource Values and Uses Which Wilderness Designation of the Area Could Ensure

The standard list of benefits to other resources listed in Section II.A., will result if the Job Peak WSA is designated as statutory wilderness. These benefits result from the maintenance of present, undisturbed conditions, and would accrue to wildlife, watershed, air quality, scenic quality, cultural resources and recreation.

Component No. 4: Diversity in the National Wilderness Preservation System

This component is discussed at length in Section II.A., of this report.

Criterion No. 2: Manageability

The basic thrust of management for the Job Peak study area, should it be designated as wilderness, would be to provide opportunities for primitive recreation. Recreational use in this WSA could have adverse impacts on the resident Desert Bighorn sheep population and recreational carrying capacity calculations would need to take this factor into account. Some visitors may have to gain access to the unit through areas where resource uses are taking place which are generally incompatible with wilderness management objectives. Certain locations, particularly on the east side, would receive concentrated use as trail heads and destination points. It may be desirable to take measures to encourage use of other locations throughout the area although this should not be necessary for some time after designation.

In the northwest portion of the WSA the presence of five cherrystem roads which provide access to several range improvements and which traverse relatively open terrain creates a difficult manageability problem. These roads and grazing facilities are concentrated in a relatively small area, it would be difficult to control off-road vehicle use and a visitor to the area would find it hard to avoid their impacts. In addition, the highest concentration of mining claims in the WSA is located in this area. Only one small area of mining activity currently exists. Development potential of the other claims is uncertain.

Three cherrystem roads (R-7, R-8, R-10) currently provide access deep into the interior of the study area. All three service grazing facilities and, in addition, there are fourteen mining claims located approximately one mile north of the end of the Elevenmile Canyon road. Rehabilitation of these roads would not be feasible because of the valid rights attached, but restricting the use of them to the grazing permittee and the mining claimant might be possible and desirable so as to limit off-road use and vehicular access to the central portion of the area. If such limitations are not imposed, management of the central part of the WSA would be made more difficult because of the access which these roads provide and the potential for off-road vehicle travel in the surrounding areas.

No private inholdings exist in the study area, so there are no manageability problems with nonconforming developments on such inholdings or with providing access to them.

Approximately 23,320 acres in the southeast quarter of the study area have been proposed for withdrawal by the Fallon Naval Air Station. Preliminary indications are that no facilities would be constructed on this land and that the area's suitability for preservation as wilderness would not be significantly impaired.

The Navy also plans to install a small, solar-powered radar site approximately 3/4 mile east of Job Peak and roughly 800 feet below its' summit. This site would occupy an area of 250 square feet and have an antenna extending 10 feet into the air. It appears that this activity would comply with the IMP. It is anticipated that this would have to be serviced monthly by helicopter. Such servicing would cause no direct management problem and could probably be accommodated under the Wilderness Management Policy and the wilderness management plan eventually written for the area. However, the site is located in that part of the WSA most likely to be explored by a visitor to the area. Due to the visibility of the site from the ridge top, indirect management problems such as vandalism could arise. The visual intrusion could be significant especially considering the attraction which the mountain would hold for wilderness visitors. Visitors would need to be alerted to the fact that servicing of the facility could occur during their visit, possibly causing an adverse impact on solitude and their recreational experience. While there would be little need initially to draw attention to the facility should the area be designated as wilderness, visitor education and/or protective measures might be required at later date. The IMP states that the Bureau could require removal of the facility if necessary for proper management of the area as wilderness. From a practical standpoint, however, it seems unlikely that this would occur since this site is one of the most important in the proposed NAS system. The Navy would undoubtedly petition the Department and/or Congress for a waiver of the IMP in such an instance.

As discussed in Section II.A., implementation of a Supersonic Operating Area (SOA) in the airspace above the WSA would have significant impacts on solitude opportunities in the area. From a manageability standpoint, it would be necessary to educate the recreating public about this activity in order that they not entertain unreasonable expectations about solitude opportunities.

Geothermal leases are currently held on approximately 15,200 acres in the eastern portion of the WSA, primarily on the alluvial fan and low foothills of the mountains south of Coyote Canyon. In compliance with the IMP, two geothermal test holes have been drilled in this area. It is anticipated that such exploration will resume if the economy improves.

Roughly 8700 acres of land under geothermal leases is also overlaid with recently issued oil and gas leases. Another 1100 acres to the north also is leased for oil and gas, bringing the total acreage to approximately 9800 acres. No exploration has yet occurred and the potential for development is low.

The Job Peak Habitat Management Plan and associated fire management plan call for a 1900 acre prescribed burn on the east side of the range just south of Job Peak. This would thin the existing dense tree cover for the benefit of the recently reintroduced Desert Bighorn sheep population and would be accomplished by using a drip torch hung from a helicopter. Both the Wilderness Management Policy and the IMP allow such an action, although use of a helicopter inside the wilderness would need to be approved and the public notified that recreational use in the immediate vicinity of the burn would be curtailed for a short period of time.

On the east side of the WSA there is a 1280 acre peninsula-like arm of non-WSA land bounded by the Dixie Valley fault scarp, Coyote Canyon road and county road 380. Nothing would be added to the wilderness values of the area if this acreage were reinstated to the WSA, although the possibility would be eliminated that resource uses might take place there which would conflict with wilderness management objectives on surrounding lands.

The alluvial fans on both the east and west sides of the WSA are easily accessible to cross-country vehicle travel and would be difficult to effectively manage as wilderness. A substantial acreage along the fans was deleted during the intensive inventory due to the apparent unnaturalness of the land caused by off-road vehicle travel. These fans would need to be monitored frequently to prevent degradation of solitude opportunities and naturalness.

Conclusion

Some significant problems exist for managing the Job Peak WSA as wilderness in the long term. The northwest portion of the area is impacted by several roads and there is sporadic but continued interest in the mineral values of the area. Other cherrystem roads provide vehicular access deep into the interior of the WSA. The alluvial fans are susceptible to uncontrolled ORV use. The fan in the southeast quarter of the area is overlaid by both geothermal and oil and gas leases, and some exploration has already occurred. In addition, the Navy has applied for withdrawal of over 23,000 acres of land in this area.

Use limitations would need to be placed on certain roads if manageability is to be maximized. Visitor use is likely to be concentrated in the relatively small area along the ridgetop between Job Peak and Shaly Peak and in a few canyons along the east side.

The northeast part of the unit, from the northern boundary south to East Lee Canyon and east of the main ridge line down to the alluvial fan, has few manageability problems.

QUALITY STANDARDS

Standard No. 1: Energy and Mineral Resource Values

The Job Peak WSA is located within the southern portion of the Stillwater Range, a typical block faulted range of the Basin and Range province. The geology is essentially the same as the Stillwater Range WSA described earlier with the following exceptions. The Late Triassic clastic sedimentary sequence and the Jurassic gabbroic rocks do not crop out within the WSA. Tertiary volcanics and intrusives are the predominate rocks exposed. The volcanics are older and the intrusive rocks younger than those exposed in the Stillwater Range WSA. The Late Triassic sedimentary sequence crops out to the north and south of the WSA and is presumed to underlie the Tertiary volcanics.

Metallic mineralization is associated with the intrusive bodies and occurs as epithermal veins and deseminated sulfides. It is postulated that the contact of the Late Triassic sedimentary sequence and the intrusives at depth may contain mineralization similar to that exposed in the northern Stillwater Range (GEM, 1983).

Exploration for precious metals is active in the Poco/Job Canyon areas. A large claim block staked on precious metal-bearing veins with wide zones of epithermal alternations is currently being explored by Oasis Mining. The property is under lease from Anaconda.

Favorability for the occurrence of metallic minerals within the majority of the 85,200 acre Job Peak WSA is considered moderate with a moderate to low confidence level. The occurrence of intrusive bodies in probable contact with favorable host rocks, adjacent known mineralization, and exploration interest in the area is the basis for the moderate rating.

No known deposits of nonmetallic minerals, with the exception of sand and gravel, exist within the WSA and the favorability for the occurrence of such is considered low (GEM, 1983). Sand and gravel is widespread throughout the area and has no special value here. A discovery of geothermal resources within and immediately adjacent to the WSA has not been made to date, however, the geologic environment is similar to the known geothermal areas in the Stillwater Range WSA. Exploration for geothermal resources within the WSA has been active in the past though the results have been disappointing. Hunt Energy Corporation has drilled three deep test wells within or in the vicinity of the WSA with inconclusive results.

The range front areas of the WSA (39,000 acres) have been rated as highly favorable for the occurrence of geothermal resources. The interior areas (51,200 acres) are rated as moderate (Map 20).

Approximately 15,200 acres have been leased for geothermal resources, predominately in the southeast corner of the WSA.

Oil and gas resources are not known to occur within the WSA, an area outside the petroliferous miogeosynclinal province (GEM, 1983). The east and west margins of the WSA, part of the Dixie Valley and Carson Sink alluvial basins, have been rated as moderately favorable with low confidence for the occurrence of oil and gas. The remainder of the WSA is rated low. Approximately 9,800 acres are leased for oil and gas, all located on the eastern margin.

Conclusions

1. There are no active mines or energy developments within the WSA.

2. Mining and geothermal exploration is taking place in and adjacent to the WSA. Potential for development within the WSA is fair to good.

3. The majority of the WSA is rated moderately favorable for the occurrence of metallic minerals and high to moderate for geothermal resources. Oil and gas is rated moderate along the east and west margins and very low in the interior.

4. There are 235 mining claims, 15,200 acres under geothermal lease, and 9,800 acres under oil and gas lease within the WSA.

5. No strategic or critical materials are known to occur within the WSA.

Standard No. 2: Impacts on Other Resources

In addition to those impacts discussed in Section II.C., the following impacts relate specifically to the Job Peak WSA. Further detail regarding impacts under each alternative may be found in Chapter Four of the Lahontan RMP.

A. Recreation

Adverse impacts to the recreation resource resulting from wilderness designation would be those listed in Section II.C. Approximately 3.2 percent of the resource area would be closed to ORV use should the entire study area be designated as wilderness by Congress. Recreation use projections may be found in Section IV of this report.

B. Range

Portions of five allotments are located in the WSA. Four different operators run cattle in these allotments. The La Plata/Mountain Well, Dixie Valley and White Cloud allotments are used primarily in the spring, summer and fall while Frenchman Flat is grazed in the winter and spring. The future quality of grazing is expected to remain the same.

Cherrystem roads would remain open to permittees. With designation, livestock operators would generally be required to manage their livestock on horseback or foot while leaving their vehicles on border roads or at the terminus of a cherrystemmed road. There would be few impacts on present grazing management practices since most major range improvements are located alongside or nearby these roads. There would be few impacts on present grazing management practices however, since most major range improvements are located alongside or nearby these roads and the majority of minor improvements (*e.g.* spring developments) already are serviced via horseback.

C. Forestry

Designation of the Job Peak WSA as wilderness will not affect the annual allowable cut in the forestry program since that cut is based on productive woodlands and all woodlands found in the study area have been classed as non-productive in nature.

D. Cultural

Unless an extensive cultural resources inventory is undertaken prior to designation, it is likely that smaller sites may be obliterated and isolated artifacts lost through casual collection as a result of increased visitation. This will be offset somewhat by the additional protection afforded the area due to limited vehicular access.

E. Lands

No private land exists within the WSA.

F. Energy and Minerals

Ninety thousand two hundred nine (90,209) acres of public land would be withdrawn from mineral entry. Four thousand seven hundred (4,700) acres, encumbered by 235 mining claims, 15,200 acres under geothermal lease, and 9,800 acres under oil and gas lease would be affected.

Eighty-five thousand two hundred (85,200) acres of lands rated as having moderate favorability for the occurrence of metallic minerals would be withdrawn. Designation would constrain exploration in the Poco Canyon area (Tatkin, 1983).

Fifty one thousand two hundred (51,200) acres of lands rated as having moderate favorability and 39,000 acres as having high favorability for the occurrence of geothermal resources would be withdrawn. Designation would constrain geothermal exploration in the Eleven Mile Canyon/Pirouette Mountain prospect areas.

Twenty-four thousand (24,000) acres of lands rated as having moderate favorability for the occurrence of oil and gas would be withdrawn (GEM, 1983).

Wilderness designation of the Job Peak WSA would have significant adverse impacts regarding the exploitation of energy and mineral resources. Over 94 percent of the WSA has a moderate or high favorability for metallic minerals and geothermal resource. Exploration for minerals is currently active. Geothermal exploration has been active over the last five years. Potential for development is good. Numerous mineral leases and mining claims would be affected and the remaining unappropriated land withdrawn. The Job Peak WSA is considered one of the more favorable environments for the occurrence of metallic minerals within Region 3 of the Basin and Range Province (GEM, 1983).

G. Wildlife

The Job Peak Fire Prescription Plan may be affected if the area is designated as wilderness since prescribed burning will not be permitted in order to improve wildlife utilization. A prescribed burn may be allowed only for the following reasons:

a. It is needed to maintain the natural condition of a fire-dependent ecosystem or to re-introduce fire where past strict wildfire control measures have interfered with the natural ecological processes.
b. A primary value of a given wilderness will be sustained as a result of the burning.
c. It will promote the perpetuation of a threatened or endangered species.

The presence of Desert Bighorn sheep in the area could be considered a primary value of the WSA, however, since this is the only Carson City District WSA in which they are present and one of the few locations in northern Nevada where they are found. In addition, they are listed as a "sensitive" species by the Nevada Department of Wildlife. The prescribed burn would be accomplished for the benefit of these sheep and could, therefore, probably be allowed.

H. Others

No significant adverse impacts will result to water quality, wild horses, air or soil quality.

Conclusion

Some conflict exists in the Job Peak WSA between wilderness designation and management for other resources in the unit. Energy and mineral development would experience the most profound impact.

Standard No. 3: Impacts of Nondesignation on Wilderness Values

In addition to the general points made in Section II.C., the following are likely to impact the wilderness values of the area if it is not designated as wilderness.

Geothermal exploration, and possibly oil and gas exploration, likely will occur along the alluvial fan and foothills of the southeast and east central portion of the area.

Mineral exploration and development could occur around the blocks of claims found in the northern part and south central part of the WSA, and new claims may be located elsewhere.

Some additional rangeland improvements, including pipelines, spring developments and fencelines may be installed, although none are planned at the present time.

No restrictions would be placed on aircraft overflights and helicopter servicing of a naval radar site. Solitude opportunities could be severely impacted in the long term if the number or intensity of sonic booms caused by planes from the Fallon NAS increases substantially.

Conclusion

If not designated as wilderness, naturalness and solitude opportunities will be degraded and possibly lost in those areas experiencing energy or mineral exploration and development. New range improvements could cause some loss of naturalness in the areas immediately surrounding the improvements. Air training exercises have the potential to produce severe impacts on the area's solitude opportunities.

The north central portion of the WSA, around the central ridgeline, should remain undisturbed for the foreseeable future.

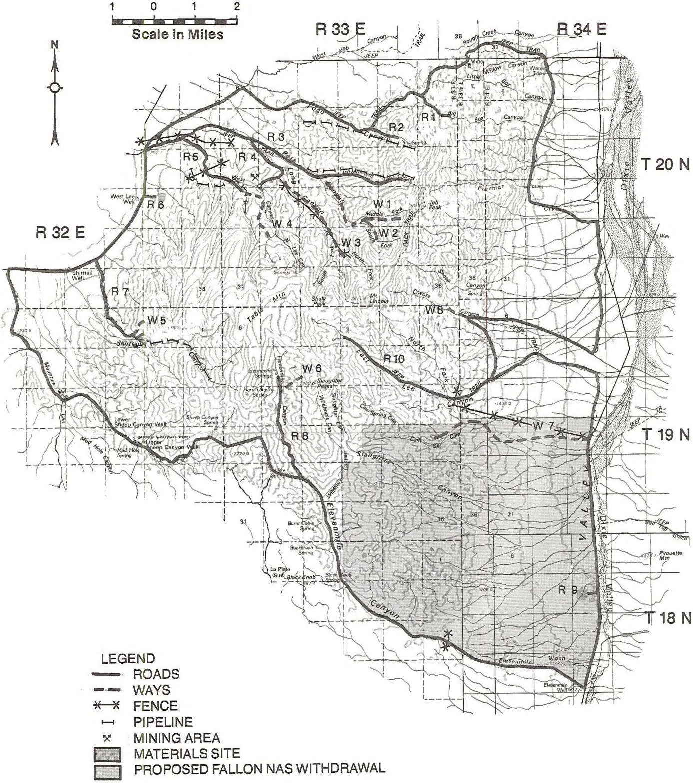
Standard No. 4: Public Comment

Standard No. 5: Local Social and Economic Effects

Standard No. 6: Consistency with Other Plans

These standards are addressed in the Resource Management Plan itself and in Sections II.C. and Appendices B and C of this report.

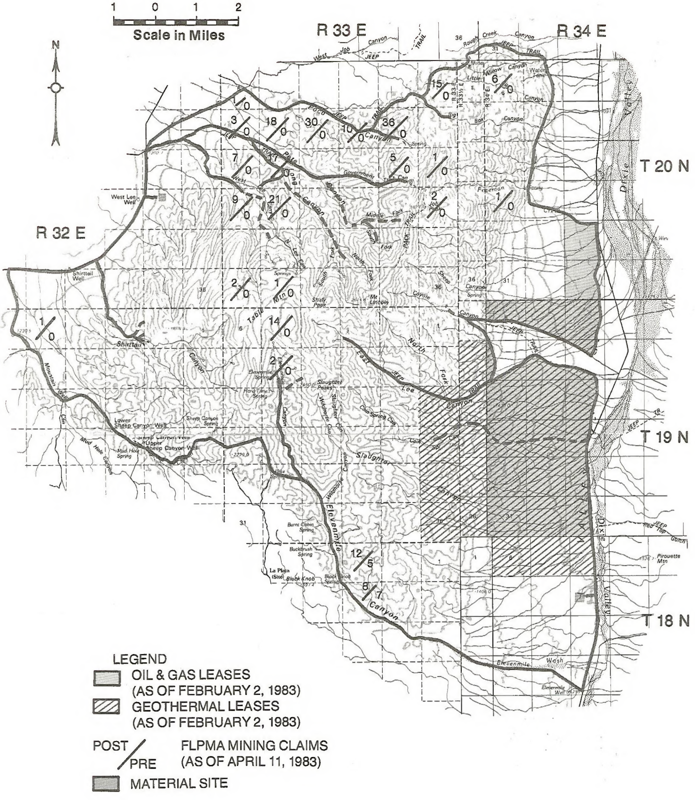
Job Peak WSA Maps



MAP-18

EXISTING SITUATION

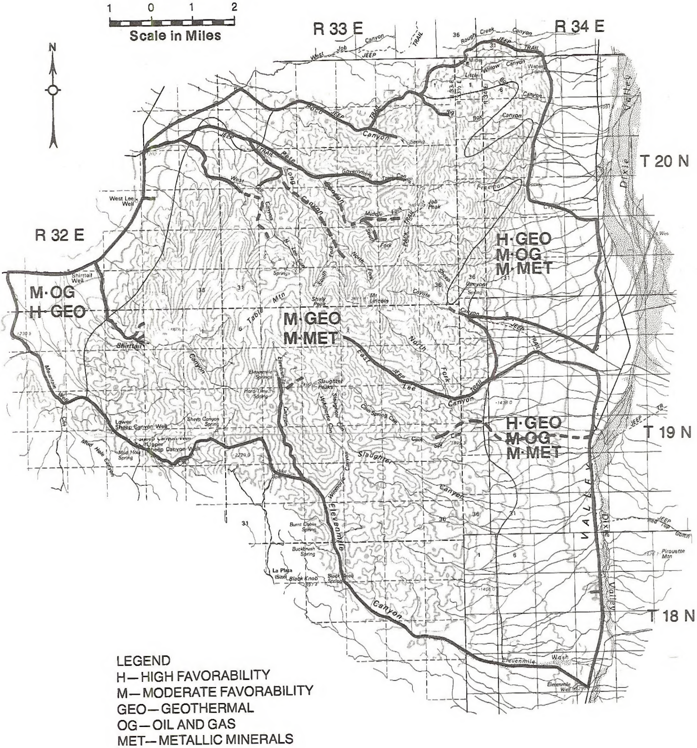
JOB PEAK NV-030-127



MAP-19

MINING CLAIMS & MINERAL LEASES

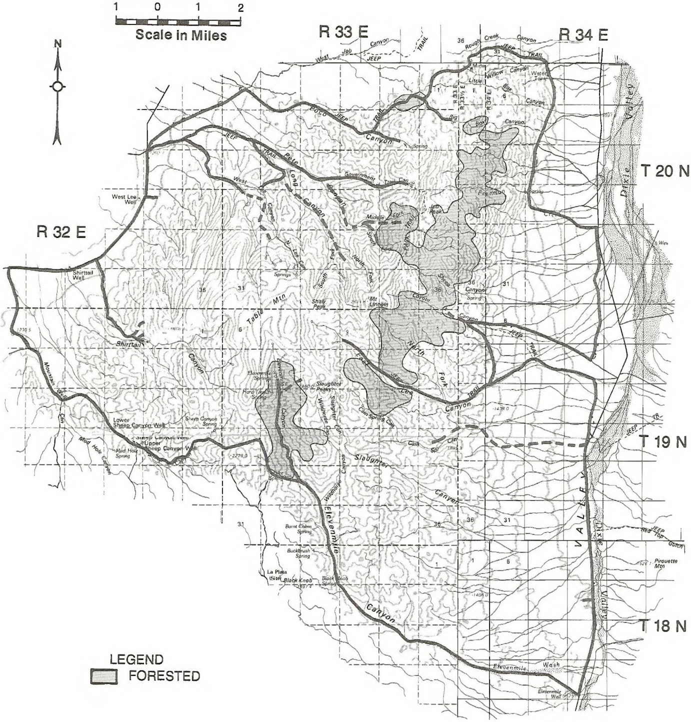
JOB PEAK NV-030-127



MAP-20

MINERAL POTENTIAL

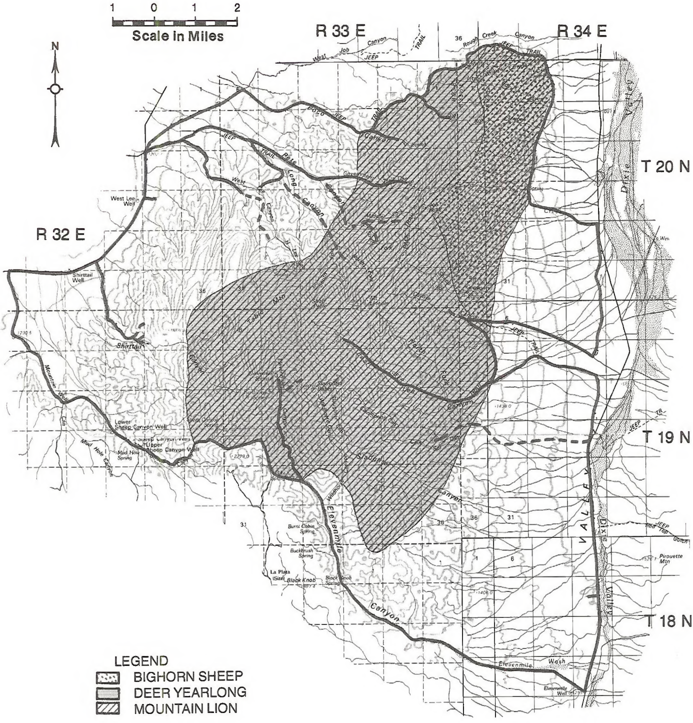
JOB PEAK NV-030-127



MAP-21

WOODLAND

JOB PEAK NV-030-127



MAP-22

WILDLIFE HABITAT

JOB PEAK NV-030-127

Appendices

APPENDIX A

RECREATIONAL USE OF LAHONTAN RESOURCE AREA WILDERNESS STUDY AREAS

Introduction

Recreational use within the four wilderness study areas is difficult to estimate. Other than for data compiled by the Nevada Department of Wildlife (NDOW) on the number of hunter days spent in the management areas which encompass Churchill County there are no other recreational use statistics kept on a regular basis.

The following estimations are based upon the available data, information derived from recently installed road counters and professional judgment.

It should be noted that the Bureau has recently adopted the use of Recreation Visitor Hours (RVH) as a unit of recreational use measurement, thus replacing the Recreation Visitor Day (RVD) as the measurement standard. This was done in order to standardize visitor use measurements among Federal land management agencies. RVDs are still used in the text of this appendix, however, in order to conform with the Nevada Department of Wildlife's method of measuring hunting use and the Resource Planning Act's method of estimating user day benefits. RVDs may be converted easily to RVHs by multiplying them by twelve.

General Assumptions

1. Deer Hunting

In 1981, Churchill County (NDOW Management Area 18 plus that part of Management Area 153 within the county) had a total of 150 hunters hunting a total of 514 days (Hess, 1983).

Based upon professional judgment it is estimated that this hunting was distributed as follows:

Area	Percent of Total Hunter Days	Number of Hunter Days
Clan Alpine Range	40	206
Stillwater Range	20	103
Desatoya Range	35	180
Remainder of the County	5	25
TOTAL	100%	514

It is assumed that all hunting takes place inside the WSA boundaries within the respective mountain ranges and that hunting in the Stillwater Range is evenly divided between the two WSAs found in that range. It is also assumed that the 8990 acres in the Desatoya Mountains WSA which lies in Lander County does not have a significant impact on these figures. A final assumption is that deer hunters tend to camp out overnight rather than return to their homes. This is significant in that each hunter day is thereby assumed to represent two Recreation Visitor Days (RVD). Each RVD is defined as twelve hours of an aggregate activity.

With these assumptions in mind, RVDs for deer hunting in the four WSAs are as follows:

WSA Number	WSA Name	RVDs
NV-030-102	Clan Alpine Mountains	412
NV-030-104	Stillwater Range	103
NV-030-110	Desatoya Mountains	360
NV-030-127	Job Peak	103

2. Chukar Hunting

Because of the frequent yearly variations in chukar populations an average of the total hunter days for chukar hunting in Churchill County was taken for the years 1977-1981 (NDOW, 1978-82). This indicates that there was an average of 448 hunters hunting a total of 1386 days within the county.

Based upon professional judgment it is estimated that this hunting was distributed as follows:

Area	Percent of Total Hunter Days	Number of Hunter Days
Clan Alpine Range	30	416
Stillwater Range	50	693
Desatoya Range	5	69
Remainder of the County	15	208
TOTAL	100%	1386

It is assumed that all hunting takes place inside the WSA boundaries within the respective mountain ranges and that hunting in the Stillwater Range is evenly divided between the two WSAs found in this range. It is also assumed that the 8990 acres in the Desatoya Mountains WSA which lies in Lander County does not have a significant impact on these figures. A final assumption is that chukar hunters, unlike deer hunters, tend to go out hunting for only a portion of the day and return home at night. This is important to note since hunter days therefore must be divided by the regional multiplier, in this case 2.7, in order to determine the number of RVDs of chukar hunting in each area (USDI, I.M. 83-27, 1982).

With these assumptions in mind, RVDs for chukar hunting in the four WSAs are as follows:

WSA Number	WSA Name	RVDs
NV-030-102	Clan Alpine Mountains	154
NV-030-104	Stillwater Range	128
NV-030-110	Desatoya Mountains	26
NV-030-127	Job Peak	128

3. Other Recreation

Other recreational use includes hiking, camping, horseback riding, gathering woodland products, recreational vehicle use and other forms of dispersed recreational activity. Because of the limited data available on the extent of these activities within the WSAs, the estimations made below are necessarily based largely on professional judgment.

4. Motorized vs. Non-Motorized Recreation

It would be difficult to break down existing visitor use estimations between motorized and non-motorized recreational activities. Vehicles are most certainly used to gain access to the areas, however, once there non-motorized recreation predominates. While there is undoubtedly some recreational ORV use or "driving for pleasure" on cherrystem roads and ways it should be remembered that virtually all of these routes are dead-end, thus limiting point-to-point or circular types of trips. In addition, many of these routes are found in canyon bottoms and dry washes, areas which are not especially conducive to a high quality four-wheel driving experience. It is assumed therefore that all visitors to the WSAs engage in some form of primitive recreational activity during their stay.

Cherrystem roads may continue to be used after designation. Thus it is believed that recreational use should remain at approximately the same level in the short-term with or without designation of an area as wilderness. Increased visitation because of designation should, in the long term, offset whatever loss of RVDs that are attributable only to ORV use.

WSA Specific Assumptions and RVD Use

1. NV-030-102 Clan Alpine Mountains WSA

A road counter has been situated along the War Canyon road, the best access to the WSA, for the past ten months. Extrapolating this data indicates that 667 vehicles will use this road in a year. It is assumed that 30% of this use results from administrative activities of the BLM, livestock management activities performed by the grazing permittee and hunters. This leaves 467 vehicles a year using the area for recreational purposes. Since this road is the best access to the study area, it is estimated that this figure represents roughly 40% of the vehicles gaining access to the boundary of the WSA. The remaining 60% of the vehicles, or 701 vehicles, enter at some other point. This extrapolation provides a total of 1168 vehicles a year entering the WSA for recreational purposes.

Within the state of Nevada it has long been assumed that an average of 2.5 persons are in each vehicle tripping a recreational use road counter. This would indicate that 2920 persons were in 1168 vehicles.

The professional judgment of the staff and area recreation planners and the area wilderness specialist is that each visitor would spend at least six hours in the area, or .5 RVD. When multiplied by 2920 persons, this indicates that there were 1460 RVDs for activities other than deer and chukar hunting. Total RVDs for the WSA are as follows:

Activity	RVDs
Deer Hunting	412
Chukar Hunting	154
Other Recreation	1460
TOTAL	2026 Recreation Visitor Days

2. NV-030-110 Desatoya Mountains WSA

A road counter has been situated along the main road to Willow, Big and Little Dens Canyons for the past year. Data indicate that 489 vehicles use this road in a year. Again assuming that 30% of this use results from administrative activities of the BLM, livestock management activities performed by the grazing permittee and hunters, this leaves 342 vehicles a year using the area for recreational purposes. It is estimated that this figure represents roughly 50% of the vehicles gaining access to the boundary of the WSA since many of the WSAs best known features are located in this area. There are at least two other major access points to the study area. By extrapolation we may assume that 684 vehicles a year enter the area for recreational purposes. Again using 2.5 persons per vehicle as an average, it is estimated that 1710 persons were in these vehicles. Assuming once more that each visitor spends at least six hours or .5 RVD in the area, we may estimate that there were 855 RVDs for activities other than deer and chukar hunting. Total RVDs for the WSA are as follows:

Activity	RVDs
Deer Hunting	360
Chukar Hunting	26
Other Recreation	855
TOTAL	1241 Recreation Visitor Days

3. NV-030-104 Stillwater Range and NV-030-127 Job Peak WSAs

These two WSAs are being discussed together since they both lie in the same mountain range and since there are no road counters in this area nor are there any other recreational use data sources. Consequently, estimates of recreational use other than deer and chukar hunting are based solely on professional judgment.

Neither area is as well known or as physically attractive as the Desatoyas or Clan Alpines. The Job Peak WSA has more interesting features than the Stillwater Range WSA and thus probably receives slightly more recreational use.

For purposes of this analysis, the following methodology was employued for estimating Other Recreation RVDs for these two WSAs:

a) An average was taken for Other Recreation RVDs in the Desatoyas and Clan Alpines WSAs: $\frac{855 + 1460}{2} = 1157.5$ RVDs

b) It was estimated that Other Recreation RVDs in the Job Peak WSA were approximately 30% of this average or 347 RVDs.

c) Since the Stillwater Range WSA has fewer interesting features than the Job Peak WSA its Other Recreation RVDs were estimated to be 25% of the average, or 289 RVDs.

Total RVDs for these two WSAs is estimated to be as follows:

Activity	Job Peak	Stillwater Range
Deer Hunting	103	103
Chukar Hunting	128	128
Other Recreation	347	289
TOTAL	578	520

Recreational Visitor Day (RVD) Use Projections

Projecting use of the four study areas into the future is quite difficult due to the uncertainty involved and the relative lack of trend data. However, it is necessary in order to estimate user day benefits for these areas.

The table below is predicated upon four major assumptions:

1) Use is projected to the year 2004, twenty years from the date when it is likely that final wilderness suitability recommendations will be submitted to Congress. Projections are applied only to nonhunting recreation since hunting related recreation is dependent on species population. Recreational hunting is assumed to remain at a relatively constant level over time with or without wilderness designation.

2) Use of the areas without wilderness designation will increase 94.6%. This percentage is based upon figures found in Preliminary Nevada Population Forecasts: 1980-2000, Nevada Bureau of Business and Economic Research, July, 1982, and represents the expected increase in the state population from 800,493 in 1980 to 1,557,737 in the year 2000. The four year difference between the year 2000 in this report and the year 2004 in the table below is considered insignificant since both the table and the population forecast data use a 20 year time period as their base.

3) Use of the areas with wilderness designation is expected to increase at an annual rate of 6.7%, or by 266% over the 20 year period. This percentage is based upon a study titled Trends in Recreational Use of National Forest Wilderness, U.S.D.A., Forest Service, Research Note INT-319, August 1981. This study stated that the 6.7% annual rate of increase is probably the best indicator of a possible trend for changing use after wilderness designation.

4) User day benefits attributed to wilderness use are assumed to be $10 per day. This is based on Resources Planning Act figures, U.S.D.A., Forest Service, 1979, and adjusted for inflation. These benefits are further assumed to be the same for present use, use without wilderness designation and use with wilderness designation.

Keeping these assumptions in mind, the following table projects future use and user day benefits for the four Lahontan Resource Area WSAs:

WSA AND WILDERNESS AREA RECREATION USE
AND USER DAY BENEFITS
w/o HUNTING

	WSA				
	Clan Alpine	Stillwater	Job Peak	Desatoya	Total
Existing Situation					
Visitor Days	1460	289	347	855	2951
User Day Benefits	$14,600	$2890	$3470	$8550	$29,510
Year 2004 Without Designation					
Visitor Days	2841	562	675	1664	5742
User Day Benefits	$28,410	$5620	$6750	$16,640	$57,420
Year 2004 With Designation					
Visitor Days	5344	1058	1270	3129	10,801
User Day Benefits	$53,440	$10,580	$12,700	$31,290	$108,010

APPENDIX B

LAHONTAN WILDERNESS STUDY AREA
SOCIAL ECONOMIC ANALYSIS

Economic aspects of wilderness designation are associated with ranching, mining, forestry and recreation. None of these resource uses are expected to have major effects on the Lahontan area economy as they relate to wilderness designation.

Ranching is currently the major economic activity in the WSAs. The study areas contain parts of 15 grazing allotments and are used by nine ranchers. Those parts of allotments within the WSA account for about 15,000 animal unit months of livestock forage (active preference). This amounts to about 20 percent of the public land forage in the Lahontan area.

Wilderness designation could affect ranch operations in several different ways: 1) market value of grazing allotments; 2) potential for future range improvements; 3) cost of nonmotorized vs. motorized operation; and 4) the level of vandalism.

Although grazing privileges (preference) have no recognized value by the BLM because they are considered a privilege and not a legal right, they have attained a de facto market value which could range from less than $25 per AUM to more than $75 with a typical value of about $40. Several lending institutions, rural appraisers and real estate brokers were asked what effect wilderness designation would have on the market value of grazing allotments. The response was mixed. Some, including the lending institutions felt that there would be no effect given that designation would not change the level of allowable grazing use and that therefore there would be no effect on the collateral value of the allotments for loan purposes. Others felt that the value of the allotment could be affected but that the impact would be primarily perceptual. Some ranchers believe that the level of grazing could be affected by wilderness designation at some point in the future, particularly given that the environmental goals of the administration could change with each election. Although there is nothing in current regulation that suggests any change in grazing levels, the perception that such change could occur could affect the market value. It was also recognized that possible restrictions on vehicle use and the reduced potential for range improvements could reduce the market value of the allotments. In some cases it was felt that the value could increase because of uniqueness of an allotment in a wilderness area and because of the reduced potential for vandalism resulting from vehicle restrictions. No one could put a dollar figure on the change in value. The total value of the grazing preferences in the wilderness areas is about $600,000.

For analytical purposes it could be assumed that the change in value is based on capitalizing the estimated change in costs per AUM in wilderness areas. If costs increase by seven cents per AUM (see below) then value should decrease by $.60 per AUM based on twelve percent interest over a 50 year period. Therefore, the decrease in value due to wilderness designation should amount to about $9000 in the RMP area.

The potential for future range improvements could be affected by wilderness designation because improvements would not be allowed solely to increase numbers of livestock. It would need to be shown that they would offer resource protection and enhance resource management. At present only two potential improvements have been identified: a drift fence in the Desatoya WSA and an allotment boundary fence in the Clan Alpine WSA. They are both intended to prevent cattle from trespassing on allotments where they are not licensed. It is expected that the fences would prevent 180 AUMs of trespass in the Desatoya WSA at an annual value of about $1500 and 300 AUMs of trespass in the Clan Alpine WSA at an annual value of about $2500. These figures are based on the unintentional trespass fee of $8.36 per AUM. In addition, at some point in the future the possiblility for future spring developments exists. Since such developments generally benefit rangeland condition and wildlife as well as livestock it is questionable whether they would be precluded by wilderness designation.

Another potential conflict between ranching and wilderness involves vehicle restrictions. Ranchers occasionally use vehicles in the wilderness study areas for salting, maintaining improvements and other uses. Although most of these activities can be accommodated by existing cherrystem roads and others will likely be grandfathered in, it is likely that some vehicle use will be restricted. This would generally involve the use of horses rather than pickups for such tasks as salting or minor fence maintenance.

According to a recent study in Oregon (USDI, 1982) the additional cost per mile using a pack horse rather than a pickup amounts to $1.71. This same study found that the typical cost increase would amount to about seven cents per AUM. At this level the total additional costs for the WSAs would amount to about $1,000 per year as follows: Job Peak WSA - $350, Stillwater WSA - $150, Clan Alpine WSA - $375, and Desatoya WSA - $150.

Wilderness designation could reduce the level of vandalism in the allotments. Although this is not a major problem at present it does occur on occasion. The reduction of vehicular access resulting from designation should reduce opportunities for vandalism and therefore reduce operating costs. This is not expected to result in significant cost reductions.

Mining has not been a major factor in the area's economy. It provided for about $2 million in income in 1980. This represents about 1.7 percent of Churchill County's total income. It accounted for 93 jobs or 1.9 percent of total county employment. Much of this activity can be attributed to operations such as Standard Slag which obtains their raw materials from outside the county. The gross yield of mines in the county amounted to $1.4 million in 1980. This represents less than one half of one percent of the state total.

There are thirteen active mining operations adjacent to the WSAs. Five of these were listed in the directory of Nevada mine operations for 1981. Major products are gold, silver, and antimony. The United States relies on imports for most of its needs for each of these minerals. Employment at these mines totals nineteen, or less than one half of one percent of Churchill County employment. Net proceeds (similar to profits) from these operations amounted to $103,000 in 1981. This yielded about $1,000 in property tax to the county.

There has been much exploration for geothermal resources in the area. Test holes have been drilled adjacent to or in the low elevation areas of the Stillwater, Job Peak and Clan Alpine WSAs. Geothermal potential is considered moderate to high (see Standard No. 2: Impacts on Other Resources).

The future demand for minerals from the study area cannot be quantified in terms of tons or acres. The GEM report has estimates on the expected increase in consumption on a national level for the mineral resources found in the WSAs.

The number of cords of firewood sold in the Lahontan Resource Area has declined from a high of 574 in 1980 to 413 in 1982. This can in part be attributed to an increase in prices and the USFS policy regarding free use permits. Current cutting areas and other areas outside the WSAs could accommodate a 90 percent increase in the quantity of cords demanded. In addition, cordwood is available in the New Pass cutting area just east of the Churchill County line and in the Toiyabe National Forest 40 miles southeast of the WSAs. Unless there is a very sharp increase in demand from Reno, it is not expected that the quantity of cords demanded will exceed the number of cords available outside the WSAs by 1990. Beyond 1990 the quantity of cordwood demanded could exceed the 800 cords available per year outside the WSAs. There are 434 cords within the WSAs that could be harvested annually. These have a stumpage value of about $2170 per year. Of this amount 358 cords worth $1790 are in the Clan Alpine WSA and 76 cords worth $380 are in the Desatoya WSA. Wilderness designation is not expected to affect the Christmas tree program since there area no good quality Christmas tree cutting areas left in the resource area.

Recreation in the WSAs consists of hunting, hiking, horseback riding and general outdoor recreation. This analysis is limited to nonhunting recreation because species population rather than wilderness designation is the major cause of changes in hunting levels. Current nonhunting recreation use is estimated to be about 3000 visitor days per year. This generates economic activity through expenditures by recreationists for food, fuel, and other supplies. These expenditures are estimated to be about $14 per day (U.S. Fish and Wildlife Service, "The 1980 National Survey of Hunting, Fishing and Wildlife Associated Recreation" Washington, D.C., 1982). Total expenditures would amount to $42,000. These expenditures would generate about $12,187 in earnings and one job including the multiplier effect. This represents less than one percent of the total county income and employment, respectively.

There will be mixed effects on recreational use if the areas are designated. Vehicle oriented recreation will be eliminated except on the cherrystem roads. Non-vehicle recreation is expected to increase, partly due to the publicity that will likely accompany designation. Overall, recreation use is expected to increase to 5,700 visitor days in 20 years without wilderness designation and 10,800 with wilderness designation. The change due to designation would amount to 5,100 visitor days. This would generate about $21,603 per year in additional income as follows: Clan Alpine WSA, $10,500; Desatoya WSA, $6,300; Job Peak WSA, $2,200; and Stillwater WSA, $1,900.

Recreation use also generates nonmonetary benefits in terms of willingness to pay. These benefits are estimated to be $10 per day for wilderness recreation (U.S. Forest Service, Resources Planning Act Values, 1979 - updated for inflation). At this level current total nonmonetary benefits are valued at $30,000. An additional $51,000 could be generated in 20 years with wilderness designation.

APPENDIX C

LAHONTAN RESOURCE AREA
SOCIAL VALUES DATA

To obtain additional information on the attitudes and values associated with the four Wilderness Study Areas (WSAs) in the Lahontan Resource Area, a Wilderness Questionnaire was administered to a small sample of pre-selected key informant resource area residents, as well as a similar sampling of residents of adjacent counties or communities who had expressed an interest in the past in public land management issues in the resource area. The questionnaire was designed, among other things, to provide baseline data on perceptions and values held by those individuals on the various aspects of wilderness. It was intended that this information, when combined with similar information from other primary and secondary data sources, would be used in the completion of environmental impact statements, the preparation of land-use planning documents, special reports required by managers, and finally, for descriptive, analytical, and predictive purposes associated with wilderness area recommendations (suitable or nonsuitable).

During the month of November, 1982, nine pre-selected key informants were personally interviewed by a BLM social scientist in their homes. An additional 41 questionnaires were mailed to other key informants since it was impossible to conduct all the interviews in person prior to the Office of Manpower and Budget designated questionnaire expiration date of January 31, 1983. These informants were selected on a non-probability sampling procedure in which respondents are not selected according to chance dictums or according to known probabilities. This is a process in which respondents are chosen on the basis of informal opinion that they are representative of a given population. Out of a target population of fifty persons, thirty-two (64%) responded to the questionnaire either through participating in a personal interview or returning a completed questionnaire by mail.

Respondents represented the following occupations:

(a) Farming/Ranching;
(b) Federal Government;
(c) School/Education;
(d) State and Local Government;
(e) Wholesale and Retail Trade;
(f) Manufacturing;
(g) Finance and Insurance;
(h) Services;
(i) Real Estate
(j) Mining
(k) Transportation;
(l) Self-employed, and
(m) Students (High School; College Undergraduates; College Graduate School).

The population of the resource area is racially homogeneous, with 91 percent of the population in Churchill County being of Caucasian heritage, compared to a Nevada state average of 88 percent (U.S. Bureau of Census, PC80-1-B30, May,1982). The remainder of the county population is 0.7 percent Black, 5.0 percent American Indian, Eskimo or Aleut; 2.0 percent Asian or Pacific Islander, and 1.0 percent Other. Additionally, 4.4 percent of county residents have identified themselves as Spanish Origin, which includes persons of Mexican, Puerto Rican, Cuban, or Spanish extraction. The percentage of the respondent population who were of Caucasian heritage (84%) is somewhat below both that of the county (91%) and the state (88%). Nine percent of the respondent population were Black; three percent were of American Indian heritage; three percent were of Spanish Origin. There were no respondents of Asian, Pacific Islander, or Other heritage.

In terms of educational attainment, the 1970 median for the state was 12.4 years and for Churchill County was 12.3 years. Although a median was not computed for the respondent population due to the fact that the item on the survey dealing with years of education was too broad in scope, it would probably be somewhat higher since 59 percent of the respondents indicated they have from 13 to 16 years or more of education, with 41 percent having from 8 to 12 years of education. Forty-seven percent (47%) of the respondents were married males, while 13 percent were married females. This compares with a state-wide percentage of 58 percent for males and 59 percent for females; and a county percentage of 65 percent for males and 66 percent for females. Overall, 72 percent of the respondents were males. This percentage is considerably higher than the average male population for the state which is 51 percent and for the county which is 50 percent (U.S. Bureau of Census, 1981). However, in view of the fact that respondents were pre-selected in a politically conservative and predominately rural environment on the basis of informal opinion that they were representative of a given population, the over-representation of males is not surprising. Twenty-five percent (25%) of the respondents were 30-39 years of age; 22 percent were 50-59 years of age; 19 percent were 40-49 years of age, with 13 percent being under 20 years of age. The overwhelming majority of the respondents (72 percent) have been Nevada residents for 10 or more years.

In response to a questionnaire item that asked respondents to rank six uses of federal public lands on a scale from "Very Important", "Fairly Important", "Not Important", or "No Opinion", 84 percent rated the protection of wildlife first under the "Very Important" category; 66 percent ranked outdoor recreation second in the same category; livestock grazing and wilderness tied for third with 53 percent; mining ranked next with 38 percent; and off-road vehicle travel ranked last with six percent. In the "Fairly Important" category, livestock grazing ranked first with 38 percent; mining second with 34 percent; outdoor recreation activity third with 31 percent; off-road vehicle travel fourth with 28 percent; wilderness fifth with 22 percent; and protection of wildlife sixth with 16 percent. In the "Not Important" category, off-road vehicle travel ranked first with 56 percent; mining and wilderness tied for second with 22 percent; livestock grazing fourth with nine percent; and no one ranked outdoor recreation activity or protection of wildlife as not important.

When viewing the survey responses on this questionnaire item by area of respondent residency and occupation, some distinction between rural and urban concerns about the relative importance of various public lands multiple-use activities becomes evident. Residents of the resource area, in general, ranked livestock grazing and mining first and second in both the "Very Important" and "Fairly Important" categories. Those survey respondents living outside of the resource area, particularly those residing in the Reno urban area, tended to cluster their responses in the "Very Important" category, ranking protection of wildlife first, outdoor recreation activity second, and wilderness third. Although only a very limited pre-selected sample of resource area residents participated in the survey, and therefore the results should not be generalized, the findings would nonetheless tend to agree with some of the research directed toward the rural and urban distinctions with regard to concerns about the environment (Fleishman, 1978, and Tremblay and Dunlap, 1977). As John Loomis indicated in his research (Loomis, undated), "both residence and occupation have been found to be systematically related to environmental concerns such as air and water pollution (Buttel and Flinn, 1974) and conservation (Harry, et al, 1969)." The limited results from this survey would tend to indicate a similar dichotomy exists between the urban and rural survey respondents.

When asked the frequency with which they participated in various public lands recreational activities, there was little difference between urban and rural respondents. In the "Like To Go Often" category, a greater number of urban respondents placed more emphasis on rock hunting and collection and off-road vehicle travel than did their rural counterparts. In general, there was a plurality in both groups who were in agreement on the relative rankings in the "Like To Go Often" category. In that category, Camping Out ranked first; Hunting/Fishing second; Overnight Hikes third for urban, fourth for rural; Rock hunting/collecting fourth for urban, fifth for rural; Off-road Vehicle Travel fifth for urban, sixth for rural; and Ride Horseback sixth for urban, third for rural. Since a number of rural respondents indicated they owned horses for either business or recreational purposes, it is not suprising those respondents ranked horseback riding higher than most urban respondents. Several of the rural respondents added written comments to the effect that it really wasn't a matter of "Liking To Go Often", but rather was simply a matter of necessity in their respective ranching operations.

When responding to a questionnaire item regarding which of ten groups "Will Gain" or "May Gain" when wilderness areas are created, a majority of the respondents ranked Backpackers and Hikers first with 72 percent; Mining Prospectors second with 54 percent; Hunters and Myself and Family tied for third with 53 percent; and Children ranked fourth with a slight majority of 51 percent. A plurality of the respondents ranked mining companies and Big City residents fifth with 47 percent and Rural Residents sixth with 44 percent. Ranchers were ranked seventh at 25 percent, and ranked last were Off-road Vehicle Users with 16 percent. Written comments on the questionnaires returned by mail indicated that the gain for children would be a long-term, preservation type gain. One puzzling aspect of this questionnaire item is the 54 percent of the respondents who felt that mining prospectors would or may gain. This is inconsistent with data from discussions held with residents of two other rural resource areas in the state where an overwhelming majority of respondents identified prospectors as a group who will or may lose when an area is designated as wilderness. A number of respondents did indicate that known or speculative energy or minerals development potential exists in most, if not all, of the Wilderness Study Areas and therefore those areas should not be included in the wilderness program. However, there is no known in-depth minerals or energy resource inventory that would tend to prove or disprove this perception.

Twenty-five (25) percent of the respondents were members of a livestock or cattlemen's association; 22 percent were members of a nature conservation group such as the Sierra Club; 16 percent were members of a wildlife conservation group; and 12 percent were members of a fishing or hunting club. Although 56 percent of the respondents indicated they participated in off-road vehicle activity either often or occasionally, none of those respondents were members of an ORV club or association. Each of these interest groups is probably over-represented in the survey population in comparison to total membership in the state. Estimates by officers of in-state wildlife and conservation groups, fishing and hunting clubs, and a livestock association place the membership of these respective organizations at five percent or less of the state population. However, in view of key informant selection process, it is not surprising that these organizations are over-represented in the respondent population. Nonetheless, the views presented are consistent with views on wilderness expressed in other rural resource areas in Nevada, where informal discussions were held on a one-to-one basis with a significantly larger population sample.

A plurality of respondents (41 percent) indicated that they strongly favored the designation of some BLM administered lands as additions to the National Wilderness Preservation System. An additional 28 percent indicated that they favored the designation of some BLM administered lands as additions to the National Wilderness Preservation System. Thirteen percent (13%) strongly opposed designation, with 9 percent opposing designation. An additional 9 percent indicated that they were not sure. Although the respondent sample is too small to generalize to the public at large, the strong feeling evident to preserve lands is consistent with the findings of several statewide surveys. In a 1981 Nevada Division of State Parks Statewide Comprehensive Outdoor Recreation Plan (SCORP) survey of outdoor recreational issues, the following attitudes were recorded. Statewide 67.39 percent strongly agreed, and 25.60 percent agreed that Nevada's unique natural and unusual areas needed preserving; 3.01 percent disagreed and 4.59 percent did not respond. Further, the 1982 SCORP addresses wilderness in the first two high priority issues (A-1 and A-2). It recommends that, "Federal agencies in Nevada should give particular priority to developing and maintaining recreational areas near population centers. They are further urged to complete planning for and designation of federally managed wilderness areas,..." (p. 7-2). Issue A-2 indicates a strong public desire to preserve wildlife habitat, public lands for outdoor recreation, historic structures and sites, unique natural and unusual areas, and wilderness (p.7-3). Continuing concern of state government about preserving recreational, natural and cultural resources which have superior or high public qualities are documented in Chapter 1 in the SCORP for 1982. Nine recreational issues that have reoccurred over the past fifteen years are listed with a summary of accomplishments since 1965 for each of those issues. One of the recurring issues, Issue 3, Land Status, states, "Recreational, natural and cultural resources which have superior or high public qualities are, in many cases, in need of protection. If such resources are not acquired, reserved or otherwise protected, many of them will be lost to other uses. . . . The Federal Government, the State, counties and cities individually or cooperatively, should take immediate steps to protect lands possessing outstanding recreational, natural, and cultural resources particularly at Lake Tahoe and near metropolitan centers. The classification and withdrawal of the public domain for protection purposes should receive increased attention by recreational agencies." Survey respondents have expressed similar concerns by overwhelmingly endorsing the preservation of wildlife habitat, public lands for outdoor recreation, historic structures and sites, unique natural and unusual areas, and wilderness. Senator Howard Cannon, in a 1981 survey of Nevadans, found that there was an overall significant support (50 percent support to 41 percent nonsupport) for designating areas as wilderness.

Sixty-three (63 percent) of the respondents indicated that all types of land forms should be represented in that system. The rationale given was each land form has unique recreational, educational or scientific values and those values should be preserved for the use and enjoyment of present, as well as future, generations.

Additional evidence of the intensity with which respondents value the uniqueness of Nevada lands is reflected in a questionnaire item which asks respondents to rank on a scale (i.e. strongly value; value; neutral; low value or don't value at all) a list of ten wilderness characteristics and twelve specific recreational uses of wilderness areas. When combining responses under the strongly value and value categories, 94 percent ranked scenic quality first; 90 percent ranked vegetative and wildlife habitat second; preservation of essentially natural conditions ranked third with 85 percent; wildlife ranked fourth with 82 percent; educational and scientific value ranked fifth with 81 percent; archaeological and historical resources ranked sixth with 79 percent; geologic features ranked seventh with 72 percent; opportunity to experience solitude and ecological relationships tied for eighth place with 69 percent.

Combining the strongly value and value categories, 53 percent strongly valued or valued the opportunity to engage in primitive or unconfined activities in general. When combining the strongly value and value categories in reference to specific recreational uses of wilderness areas, 75 percent of the respondents ranked backpacking/camping first; fishing ranked second with 75 percent; horseback riding ranked third with 69 percent; sightseeing ranked fourth with 62 percent; day hiking and photography tied for fifth at 59 percent; hunting and winter sports ranked seventh and eighth at 53 percent; bird watching ranked ninth at 52 percent; water sports ranked tenth at 41 percent; rock climbing ranked eleventh at 40 percent; and the "Other" category ranked last with 0 percent.

The relative rankings of specific dispersed recreational activities as a result of respondent returns is generally close to the rankings for those same activities as reported by the Division of Parks for Region I, which includes Churchill County. However, since Region I also includes Douglas, Lyon, Storey, Washoe, and Carson City counties, and thus includes the Lake Tahoe and Reno areas, it is likely that a majority of those activities take place in areas surrounding Lake Tahoe and Reno area, especially for non-resident participants. In the Division of State Parks report, hiking/backpacking ranked first in terms of highest percentage of activity in comparison with the six regions in Nevada with 44 percent; exploring ranked second with 43 percent; sightseeing was third with 40 percent; with photography ranking fourth with 36 percent. The report indicates that Region I is providing more base for these four activitities than the local population is demanding. It is likely, under these circumstances, that some of this activity extends into the Lahontan Resource area. Fishing ranked fifth with 31 percent; camping sixth with 30 percent; horseback riding was next with 27 percent; rockhounding followed with 26 percent; and hunting ranked last with 15 percent (Dispersed Recreation in Nevada, Division of State Parks, June 1981).

When respondents were asked if they were more or less likely to visit an officially designated wilderness area rather than an area that had some wilderness characteristics but which was not an officially designated part of the National Wilderness Preservation System, 32 percent indicated that they were more likely to visit an officially designated wilderness area; 25 percent indicated they weren't sure; 9 percent indicated they were less likely; an additional 9 percent indicated they were much less likely; and 6 percent indicated they were much more likely. Sixteen percent (16%) of the respondents did not answer this item. Over half of the respondents (59%) indicated it wouldn't make any difference which one they visited since wilderness type characteristics exist in most areas that have not been designated as Wilderness Study Areas. The same feeling seems to exist in this respondent population that is evident in two other rural Nevada resource area populations concerning the availability of wilderness-like opportunities. This feeling finds expression in the belief that there is no scarcity of natural environments in Nevada--many of which are perceived to possess, in like quantity and quality, wilderness characteristics similar to those in designated Wilderness Study Areas. Although there is less support for this perception in urban areas than in rural areas, it nonetheless exists to some extent in both residential sectors. Several of the respondents expressed the belief that since there is such an abundance of natural environments in Nevada there is no need for a program that selectively designates certain of these areas to be "managed". These same individuals did not feel that the continuing pressures on public lands would, at any point in the future, seriously deplete the inventory of natural environments available for the use of the general public.

SUMMARY OF QUESTIONNAIRE DATA

The protection of wildlife, outdoor recreation, livestock grazing and wilderness are considered to be very important uses of public lands by a majority of questionnaire respondents. A plurality of the same respondent population ranked mining next in importance, with off-road vehicle activity ranking last.

In general, rural respondents, especially those who have a significant dependency on continued access to public lands for their livelihood, oppose wilderness designation. Their opposition is based, among other things, on the anticipation that jobs and opportunities (perceptual and recreational as well as economic) will be foregone as a result of designation. Urban respondents, the majority of whom would not experience a direct adverse economic impact, generally support designation.

Rural respondents tend to rank consumptive uses of public land resources (grazing, mining) higher than do urban respondents who ranked non-consumptive uses higher (outdoor recreation, wilderness). However, on the issue of specific recreational activities, there was general agreement among the two groups, with camping out and hunting/fishing ranking first and second for both rural and urban respondents. There was a slight difference between the relative rankings of the remainder of the recreational activities presented in the questionnaire but the difference between the two groups is not significant.

There was also general agreement between the two groups in response to an item dealing with specific groups who "will gain" or "may gain" when federal land is set aside as wilderness. Backpackers and hikers were perceived by a majority of respondents as gaining the most, followed by mining prospectors, myself and family, hunters and children. A plurality ranked mining companies next, followed by big city residents, rural residents, ranchers and off-road vehicle users.

The high ranking (ranked number two) of mining prospectors by this respondent population is inconsistent with views expressed in two other rural resource areas in Nevada regarding respective groups who might gain or lose when federal lands are designated as wilderness. In other wilderness assessment efforts in the state, mining prospectors have always been identified as one of the groups who "will lose" or who "may lose" when federal lands are designated as wilderness. A number of respondents also commented that minerals potential may exist in the wilderness study areas and, therefore, those areas should not be designated as wilderness.

Respondent membership in various interest groups is significantly overrepresented in the respondent population in comparison with the percentage of membership statewide for those various interest groups. However, in view of the key informant selection process, this is not surprising. Potential respondents were selected on the basis of: (1) their views were representative of majority views of specific populations; and (2) that they had an interest in the management of the resource area.

A majority (69 percent) of respondents endorsed (strongly favor or favor) the designation of BLM administered lands as additions to the National Wilderness Preservation System. This is consistent with two statewide surveys which indicated that a majority of Nevadans support the view that Nevada's unique natural and unusual areas need preserving. Interestingly, the limited data from this questionnaire seems to suggest that when land management options are presented in terms of "preserving" public land unique and unusual characteristics, those options generally receive more positive support than when land management options are presented in terms of preserving "wilderness" unique and unusual characteristics.

Although some 75 percent of the respondents indicated they had visited a wilderness area, qualifying remarks would tend to indicate that the question was misinterpreted to mean wilderness study areas.

The strong sense of respondent visual attachment to the unique and unusual characteristics of Nevada lands is reflected in responses to a questionnaire item which asks respondents to rank ten (10) characteristics of wilderness areas. Ninety-four percent (94%) ranked scenic quality first; vegetative and wildlife habitat ranked second; preservation of essentially natural conditions ranked third. In general, the visual characteristics tended to rank higher than the non-visual (e.g. opportunity to experience solitude, educational and scientific values).

Some ambivalence in respondent attitudes on wilderness was evident from responses on a questionnaire item which asked if respondents were more or less likely to visit an officially designated wilderness area rather than an area that had some wilderness characteristics but which was not an officially designated part of the National Wilderness Preservation System. Slightly over one-third of the respondents indicated that either they were much more likely or more likely to visit an officially designated area. The general feeling that finds expression on this issue is simply that there is no scarcity of natural environments in Nevada--with or without wilderness designation. Therefore, wilderness is in a very real sense in the eyes of the beholder--one seeing wilderness characteristics in an officially designated area and others seeing similar (or in some cases identical) characteristics in non-designated areas.

There is no strong indication based on this limited questionnaire data that respondents feel that continuing pressures on the public lands are threatening to deplete, in any signficant manner, the vast inventory of natural environments many of them perceive to exist in Nevada.

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